

Supplementary Information

Data-Powered Augmented Volcano Plots for Homogeneous Catalysis

Matthew D. Wodrich,^{a,+} Alberto Fabrizio,^{a,c,+} Benjamin Meyer,^{a,b} and Clemence Corminboeuf^{a,b,c,*}

^aLaboratory for Computational Molecular Design, Institute of Chemical Sciences and Engineering, Ecole Polytechnique Fédérale de Lausanne (EPFL), 1015 Lausanne, Switzerland

^bNational Center for Competence in Research – Catalysis (NCCR-Catalysis), Ecole Polytechnique Fédérale de Lausanne (EPFL), 1015 Lausanne, Switzerland

^cNational Center for Computational Design and Discovery of Novel Materials (MARVEL), Ecole Polytechnique Fédérale de Lausanne (EPFL), 1015 Lausanne, Switzerland

* Email: clemence.corminboeuf@epfl.ch

⁺These authors contributed equally to this work.

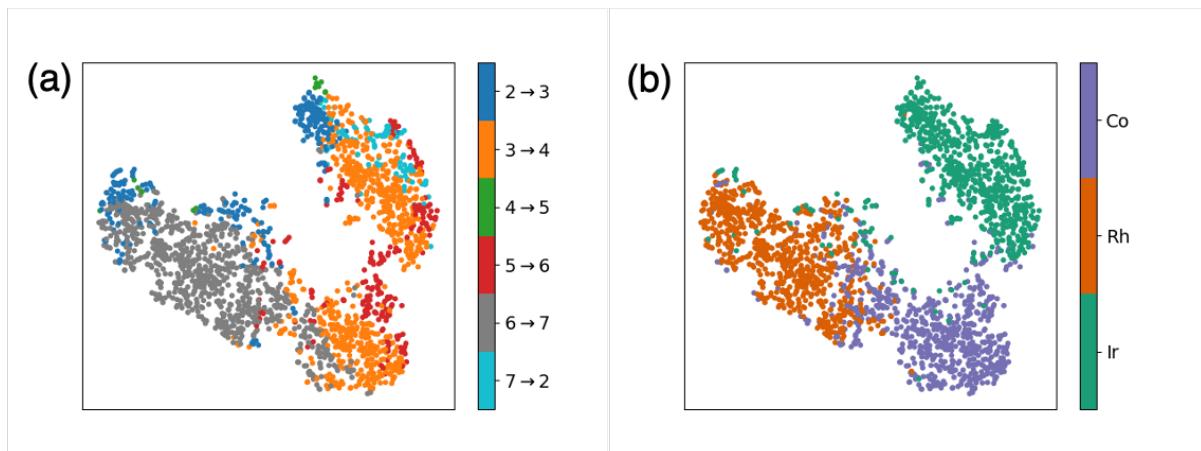


Figure S1. t-distributed stochastic neighbor embedding (t-SNE) maps that depict the overall similarity of the relative energies of the six reaction steps of the catalytic cycle (**I2**→**I3**, **I3**→**I4**, **I4**→**I5**, **I5**→**I6**, **I6**→**I7**, **I7**→**I2**) for the set of 2001 catalysts colored by (a) the potential determining step and (b) type of metal atom.

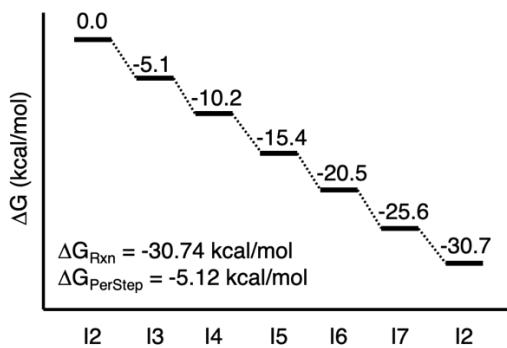


Figure S2. Catalytic cycle reaction profile of the hypothetical Sabatier ideal catalyst.

Linear Scaling Relationships and Volcano Plots.

Given the findings from our big data analysis that reveal the behavior of cobalt and rhodium catalysts is markedly different than iridium species, we examined the underlying linear scaling relationships that are generally used to construct volcano plots. In particular, we were eager to better understand why the H₂ addition/splitting (**I6**→**I7**) reaction step is thermodynamically difficult for cobalt and rhodium, but not for iridium. Figure S3 shows the underlying linear free energy scaling relationships for **I6** and **I7**, sorted by individual metal, which allows us to identify those species in the catalytic cycle that exhibit unique stability or instability. Figure 6a displays the scaling relationship between the descriptor variable [ΔG(**I5**), x-axis] and ΔG(**I6**) (y-axis). The slope/intercept similarity of the three lines (cobalt, rhodium, and iridium) indicate that there is no peculiarity regarding the stability of **I6** based on the metal center of the catalyst. On the other hand, examining Figure S3b, which displays the scaling relationship between **I5** and **I7**, shows that **I7** for iridium catalysts is far more stable than its cobalt and rhodium counterparts, as indicated by the pronounced downward shift of the black relationship.

Because **I7** appears to be particularly stabilized for iridium complexes relative to cobalt and rhodium, we were curious to see how the **I6**→**I7** (H₂ addition/splitting) reaction energy varies as a function of the descriptor variable. Figure S3c and S3d show the anticipated energies of the three critical catalytic cycle reactions as a function of the descriptor variable. Examination of these sets plots quickly reveals the origin of the two volcanoes seen in Figure 5b (main text). For cobalt and rhodium catalysts, moving from intermediate **I6** to **I7** still involves an energetic penalty, which causes this reaction step to

be a pds for these catalysts. On the other hand, **I7** is particularly stabilized for iridium catalysts, which makes H₂ addition/splitting energetically facile and never an energetically problematic step for these species. This can clearly be seen by the upward shift of the gray **I6**→**I7** relationship for iridium (Figure S3d) relative to cobalt/rhodium (Figure S3c). Since the volcano plot is formed by taking only the most energetically costly reaction step for any descriptor variable (*i.e.*, the lowest line from Figures S3c and S3d), we quickly see that the different volcano shapes observed in Figure 5 for cobalt/rhodium versus iridium catalysts arises entirely from H₂ addition/splitting being less energetically costly for iridium catalysts.

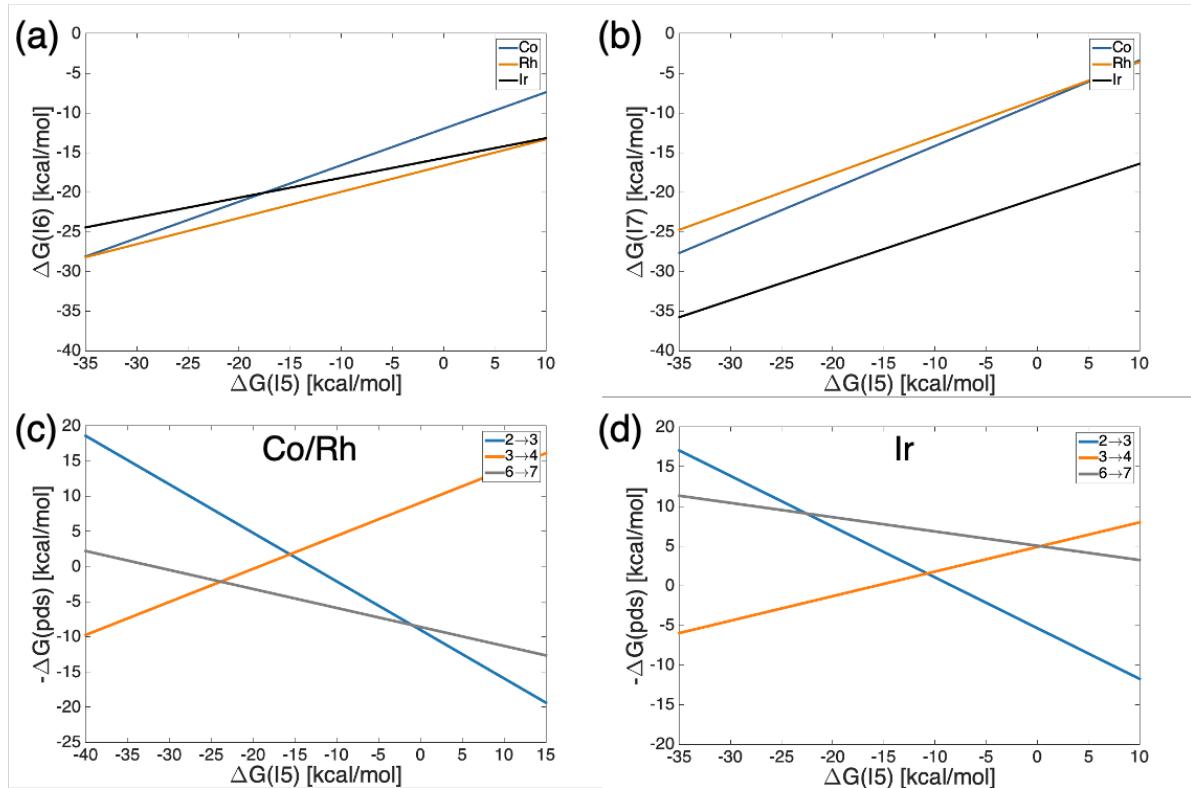


Figure S3. Linear free energy scaling relationships of (a) **I6** and (b) **I7** versus the descriptor variable, **I5**, separated by the metal center of the catalyst. Note the pronounced downward shift of the iridium relationship for **I7**, which indicates the enhanced stability of the iridium acyl dihydro intermediate compared to the cobalt and rhodium variants. Anticipated free energies of the key reaction steps of the catalytic cycle as a function of the descriptor variable for (c) Co and Rh and (d) Ir compounds.

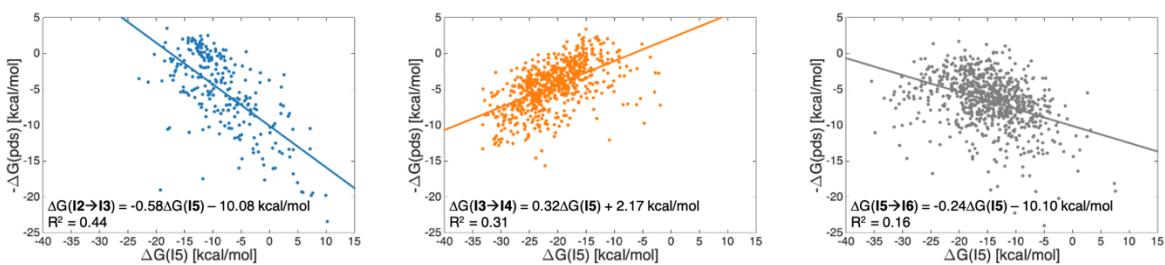


Figure S4. Correlations of best fit lines from Figure 5b.

For the interested reader, the following linear scaling relationships can be used to create individual volcano plots for catalysts containing different metal centers.

Cobalt

$$\Delta G(\mathbf{3}) = 0.76\Delta G(\mathbf{5}) + 10.76 \text{ kcal/mol}$$

$$\Delta G(\mathbf{4}) = 0.38\Delta G(\mathbf{5}) + 4.95 \text{ kcal/mol}$$

$$\Delta G(\mathbf{6}) = 0.45\Delta G(\mathbf{5}) - 12.26 \text{ kcal/mol}$$

$$\Delta G(\mathbf{7}) = 0.53\Delta G(\mathbf{5}) - 8.87 \text{ kcal/mol}$$

Rhodium

$$\Delta G(\mathbf{3}) = 0.69\Delta G(\mathbf{5}) + 8.92 \text{ kcal/mol}$$

$$\Delta G(\mathbf{4}) = 0.29\Delta G(\mathbf{5}) - 1.06 \text{ kcal/mol}$$

$$\Delta G(\mathbf{6}) = 0.33\Delta G(\mathbf{5}) - 16.69 \text{ kcal/mol}$$

$$\Delta G(\mathbf{7}) = 0.47\Delta G(\mathbf{5}) - 8.38 \text{ kcal/mol}$$

Iridium

$$\Delta G(\mathbf{3}) = 0.67\Delta G(\mathbf{5}) + 5.92 \text{ kcal/mol}$$

$$\Delta G(\mathbf{4}) = 0.29\Delta G(\mathbf{5}) - 0.11 \text{ kcal/mol}$$

$$\Delta G(\mathbf{6}) = 0.26\Delta G(\mathbf{5}) - 15.68 \text{ kcal/mol}$$

$$\Delta G(\mathbf{7}) = 0.43\Delta G(\mathbf{5}) - 20.79 \text{ kcal/mol}$$

Training of the Machine-Learning Models.

Establishing ML models requires the use of the aforementioned catalyst database in order to train them for predicting the desired free energies. Since our objective is to predict these relative energies directly from the molecular structure of the bare catalyst (*i.e.*, the structure of **I2**), an initial requirement is converting these three-dimensional geometries into suitable molecular representations that contain the necessary information to allow the relative free energy to be learned. The choice of proper representation is critical in enabling the ML models to “learn” efficiently.¹ Here, we tested three molecular representations that have seen previous used in catalysis research: the Coulomb Matrix (CM),² the Bag of Bonds (BoB),³ and the Spectrum of London and Axilrod-Teller-Muto potential (SLATM).⁴ Briefly, the Coulomb Matrix is an atom by atom matrix representation in which the potential energies of free atoms are represented by diagonal elements while off diagonal elements represent the Coulomb nuclear repulsion between atoms. The Bag of Bonds is a variant of CM in which elements are “bagged” according to bond type (C-C, C-N, etc.). Finally, the Spectrum of London and Axilrod-Teller-Muto potential accounts for both two (through London potentials) and three (through Axilrod-Teller-Muto potentials) body terms. Thus, in order of increasing complexity of the molecular representation, there is CM, BoB, and finally SLATM.

The training set consisting of 1510 catalysts was then used to train the ML models using the three aforementioned representations. In line with our previous findings,⁵ the CM and BoB representations made use of a Laplacian kernel, while the SLATM representation employed a Gaussian kernel. Hyperparameters were tuned separately for each intermediate and for each representation using a 10-fold cross-validation procedure in which ~5% of the species were randomly selected to be part of the test set. After each iteration, the species comprising the training and test sets are shuffled and the procedure repeated. Using this process, we arrived at a set of tuned hyperparameters for the ML model of each intermediate/representation combination. During this process, we found the optimized hyperparameters for each representation to be very similar. As a result, we chose to employ a single set of hyperparameters for each molecular representation (CM, BoB, SLATM) to predict the free energies associated with each of the catalytic cycle intermediates. Thus, formally speaking, each of the molecular representations employs a single unified model to predict the relative free energies of the different intermediates.

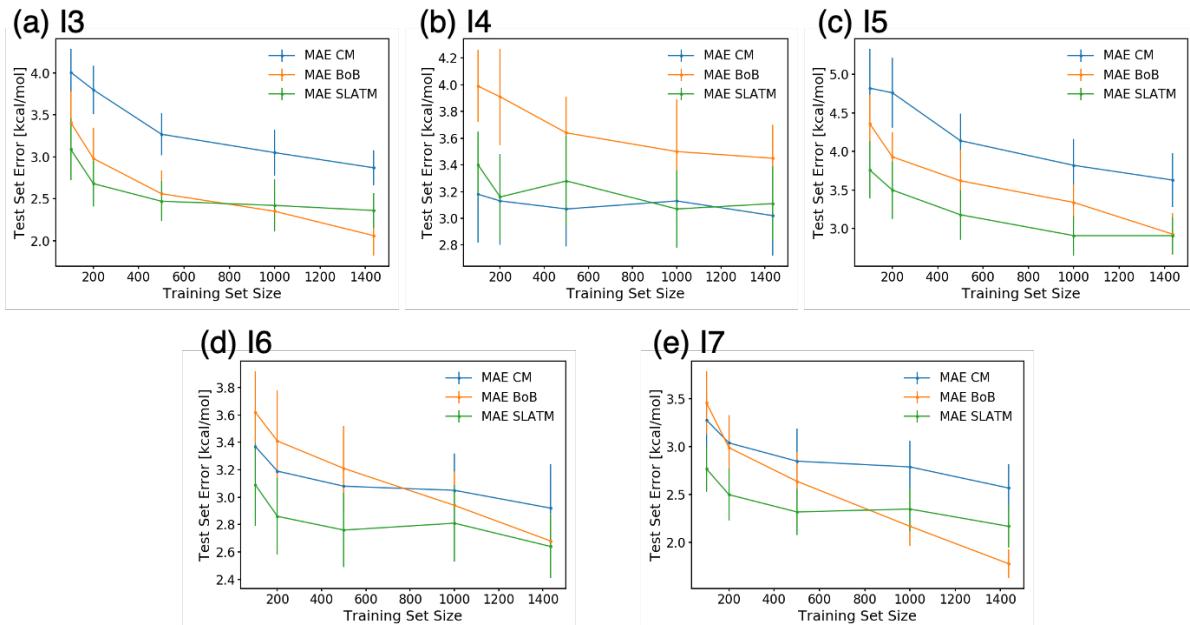


Figure S5. Learning curves (mean average error of predicted relative free energies for each intermediate versus size of the training set) for (a) **I3**, (b) **I4**, (c) **I5**, (d) **I6**, and (e) **I7** using three different molecular representations [Coulomb Matrix (blue), Bag of Bonds (orange), and Spectrum of London and Axilrod-Teller-Muto (green)]. The final points on the learning curve for the SLATM representation yield estimated errors of 2.36, 3.11, 2.91, 2.64, and 2.17 kcal/mol for **I3-I7**, respectively.

To assess the performance of the ML models as a function of the size of the training set, we constructed learning curves for each of the molecular representations for each of the intermediates (Scheme 1, main text). These learning curves show the error on a test set of fixed size (75 catalyst) for training sets of different size (100, 200, 500, 1000, 1435 catalysts). The curves depicted in Figure S5 are constructed by shuffling the catalysts belonging to the test and training sets and predicting the error for the test set molecules a total of 20 times. Globally, each of the different representations shows a decrease in the mean average error of the test set as larger number of species are included in the training set, indicative that the models are “learning” the relative free energies associated with the different intermediates. As expected, with the exception of **I4** (where learning appears to be more difficult, *vide infra*), the more sophisticated BoB and SLATM representations outperform CM. As a consequence of its consistent behavior we restrict further analysis to predictions made using the SLATM representation. A closer examination of each of the Figure S5 learning curves shows that the average errors for the test set are lower than 3.0 kcal/mol using the SLATM representation. Thus, our initial assessment of the models is that they should be quite capable for predicting the free energies profiles of other “out of sample” catalysts that are not included in the original training set.

To uncover the origins of why the relative free energies associated with some intermediates are more difficult to learn than others, we more closely examined the distribution of the values we are trying to learn for each catalyst. Briefly, the distribution of values we are attempting to learn follow the rough shape of a typical Gaussian. The width of this Gaussian, however, is quite instrumental in the ability of the ML models to learn the target value using a relatively modest training set size. Figure S6 illustrates this point more clearly; it is quickly seen that the Gaussian associated with **I3**, where the ML model learns more rapidly, is wider than the Gaussian of **I4**, where the model learns more slowly. It is important to note, however, that regardless of how “fast” the models learn, that the final points on the learning curves shown in Figure S5 indicate the expected MAE of predictions made by the model is still ~ 3 kcal/mol.

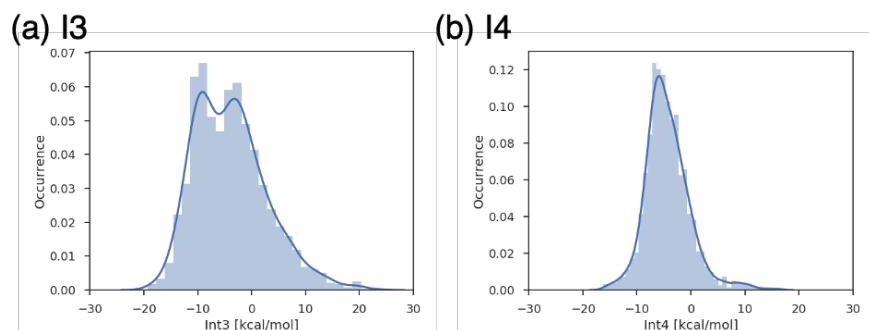


Figure S6. Distribution of relative free energies for (a) I3 and (b) I4 in the training set. The wider Gaussian distribution seen for I3 allows for more rapid learning of target energy than the narrow distribution of values seen for I4.

Out-of-Sample Predictions.

Having shown that the ML models are capable of predicting to relative free energies of each of the catalytic cycle intermediates to an accuracy near or surpassing 3 kcal/mol, we were interested in its ability and accuracy surrounding out of sample (OOS) predictions. Since ML models are only capable of rendering accurate predictions when data is interpolated (as opposed to extrapolate), we sought to create an OOS set of catalysts than contained similar, but not identical elements to that on which the model was trained. To accomplish this, we used a second set of “R” groups to construct phosphine ligands and appended these ligands to the same metal centers (Co, Rh, Ir) as in the training set. Specifically, we combined the out of sample “R” groups 23-28 (Scheme 1, main text) with each of the other R groups in training set (0-22) in the same R1/R2/R2 manner described earlier [*i.e.*, P(23)(0)(0), P(23)(1)(1), . . . , P(28)(28)(28)]. Discarding species that had ligands that dissociated, we arrived at an OOS set containing an additional 491 catalysts.

Application of the ML model to the 491 catalysts comprising the OOS set yielded a mean average error of 2.99 (**I3**), 3.27 (**I4**), 3.13 (**I5**), 3.44 (**I6**), and 2.83 kcal/mol (**I7**) for the predictions of the relative free energies. Globally, these values indicate the ML model performs impressively in accurately predicting the complete free energy profiles of catalysts directly from the molecular geometry of the bare catalyst. To gain a better understanding of the successes and shortcomings of the ML model, we plotted the distribution of mean signed errors of the ML predictions relative to the DFT computed values (Figure S4). Immediately evident from these plots is that the distributions consist of relatively narrow Gaussian shapes centered near zero, indicative of both good overall accuracy and a lack of any systematic errors. However, it does appear that prediction of energies of catalysts containing certain “R” groups remains problematic. In this respect, the presence of a cyclohexyl moiety is notable, as it regularly leads to predictions that deviate (sometimes quite significantly) from the expected values obtained from DFT computations. Such erroneous predictions could, perhaps, be reduced or eliminated entirely by the inclusion of a larger number of catalysts containing this “R” group in the training set.

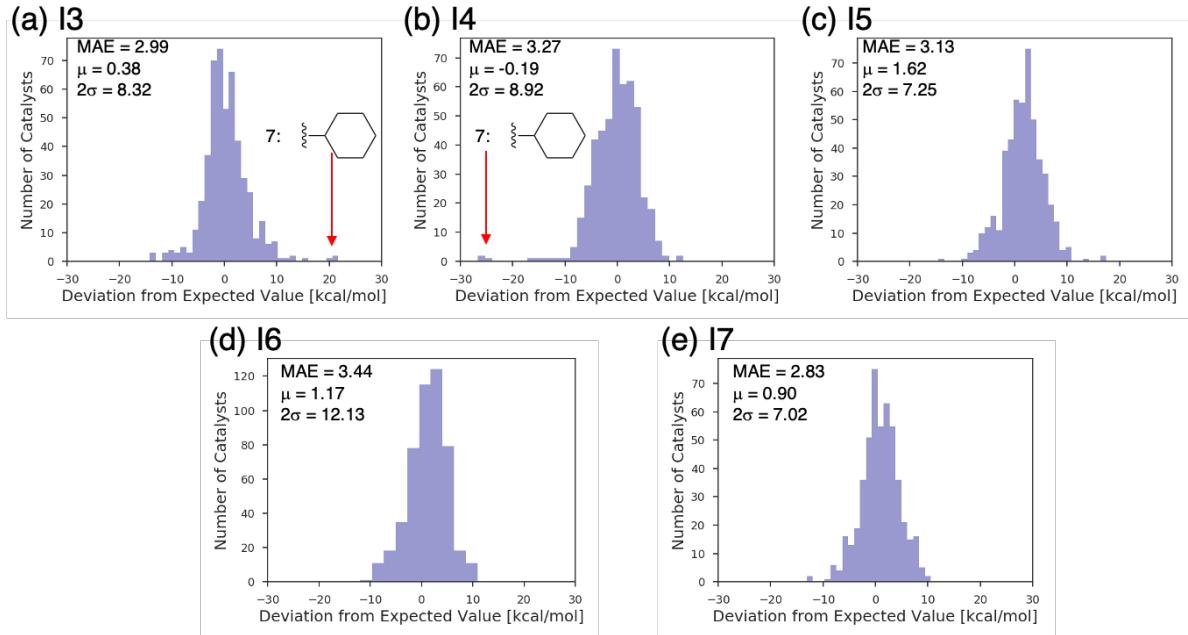


Figure S7. Distribution of mean signed errors made by the ML model for the out of sample set for (a) I3, (b) I4, (c) I5, (d) I6, and (e) I7. The Gaussian distributions being centered near zero indicates no systematic error is made by the ML model. I3 and I4 show strong deviations from expected values for catalyst containing a cyclohexyl moiety in the phosphine ligands.

Table S1. Relative free energies of catalytic cycle intermediates for the initial data set of catalysts. Values in kcal/mol.

| | $\Delta G(\text{I3})$ | $\Delta G(\text{I4})$ | $\Delta G(\text{I5})$ | $\Delta G(\text{I6})$ | $\Delta G(\text{I7})$ |
|---------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Co_0_0 | -10.81 | -6.24 | -30.03 | -25.45 | -27.21 |
| Co_0_1 | -9.65 | -4.80 | -28.04 | -28.67 | -22.74 |
| Co_0_2 | -9.54 | -5.66 | -26.03 | -27.30 | -25.22 |
| Co_0_3 | -1.94 | -5.65 | -17.14 | -21.05 | -19.53 |
| Co_0_4 | -13.46 | -6.28 | -31.97 | -27.26 | -26.69 |
| Co_0_5 | -7.81 | -2.83 | -22.06 | -24.25 | -24.94 |
| Co_0_6 | -10.58 | -6.91 | -33.72 | -29.52 | -29.40 |
| Co_0_7 | 2.29 | -1.18 | -16.56 | -16.84 | -17.93 |
| Co_0_8 | -9.52 | -6.25 | -27.11 | -24.93 | -24.13 |
| Co_0_9 | -9.99 | -7.79 | -28.87 | -29.15 | -24.94 |
| Co_0_10 | -10.95 | -6.75 | -28.93 | -27.01 | -23.44 |
| Co_0_11 | -11.45 | -4.91 | -32.92 | -30.65 | -25.73 |
| Co_0_12 | -9.29 | -6.48 | -26.01 | -26.47 | -22.20 |
| Co_0_13 | -4.34 | -5.32 | -21.69 | -22.45 | -16.50 |
| Co_0_14 | -11.38 | -5.54 | -31.14 | -25.82 | -24.73 |
| Co_0_15 | 0.19 | -7.52 | -20.53 | -25.27 | -21.74 |
| Co_0_16 | -9.05 | -1.10 | -22.63 | -29.39 | -23.53 |
| Co_0_17 | -11.74 | -1.77 | -27.53 | -28.46 | -21.11 |
| Co_0_18 | -8.34 | -6.69 | -24.28 | -25.47 | -22.96 |
| Co_0_19 | -9.00 | -3.88 | -26.94 | -29.26 | -23.06 |
| Co_0_20 | -10.52 | -2.23 | -20.18 | -18.62 | -20.71 |
| Co_0_21 | -5.40 | -7.20 | -26.67 | -26.64 | -21.49 |
| Co_0_22 | 1.44 | -2.02 | -18.96 | -23.53 | -21.76 |
| Co_1_0 | -9.76 | -4.76 | -29.65 | -28.33 | -26.77 |
| Co_1_1 | -3.05 | -4.26 | -26.06 | -25.60 | -24.87 |
| Co_1_2 | -6.31 | -2.64 | -21.92 | -19.84 | -23.28 |
| Co_1_3 | 0.27 | -1.92 | -20.71 | -20.04 | -17.67 |
| Co_1_4 | -11.09 | -8.48 | -30.95 | -28.86 | -27.65 |

| | | | | | |
|---------|--------|-------|--------|--------|--------|
| Co_1_5 | -8.88 | 0.09 | -20.32 | -24.58 | -25.76 |
| Co_1_6 | -2.43 | -4.00 | -21.66 | -16.23 | -25.97 |
| Co_1_7 | 13.27 | 9.88 | -2.87 | -6.89 | -15.21 |
| Co_1_8 | -8.33 | -7.36 | -25.48 | -25.68 | -23.56 |
| Co_1_9 | -9.67 | -6.70 | -23.36 | -22.11 | -21.59 |
| Co_1_10 | -9.25 | -7.99 | -28.27 | -24.30 | -23.10 |
| Co_1_11 | -7.29 | -3.90 | -26.44 | -21.24 | -23.58 |
| Co_1_12 | -8.63 | -8.65 | -27.91 | -24.64 | -24.93 |
| Co_1_13 | 6.19 | -1.93 | -14.49 | -18.61 | 0.40 |
| Co_1_14 | -7.48 | -6.35 | -25.96 | -25.14 | -22.25 |
| Co_1_16 | -11.87 | -5.42 | -24.19 | -30.24 | -26.83 |
| Co_1_17 | -9.01 | -7.02 | -25.23 | -19.57 | -18.52 |
| Co_1_18 | -5.67 | 0.65 | -20.18 | -17.78 | -20.32 |
| Co_1_19 | -9.13 | -0.87 | -23.91 | -23.53 | -22.73 |
| Co_1_20 | -9.20 | -8.77 | -23.51 | -24.71 | -20.87 |
| Co_1_21 | -6.20 | -3.15 | -23.40 | -28.45 | -18.84 |
| Co_1_22 | 0.15 | -3.92 | -22.09 | -17.92 | -18.10 |
| Co_2_0 | -8.83 | -5.46 | -26.47 | -24.06 | -26.33 |
| Co_2_1 | -1.45 | -4.19 | -22.83 | -28.65 | -22.69 |
| Co_2_2 | -4.21 | 0.57 | -19.72 | -18.78 | -17.52 |
| Co_2_3 | -5.10 | -3.86 | -21.71 | -20.53 | -21.20 |
| Co_2_4 | -12.72 | -9.16 | -22.07 | -26.13 | -18.35 |
| Co_2_5 | -5.58 | -7.68 | -16.72 | -22.84 | -21.31 |
| Co_2_6 | -4.46 | -2.54 | -23.94 | -23.06 | -24.92 |
| Co_2_7 | 5.41 | 2.36 | -13.75 | -5.17 | -11.82 |
| Co_2_8 | -3.88 | -6.13 | -21.13 | -21.16 | -23.45 |
| Co_2_9 | -4.17 | -5.78 | -25.34 | -25.96 | -24.12 |
| Co_2_10 | -8.15 | -4.53 | -27.18 | -25.41 | -17.17 |
| Co_2_11 | -5.86 | -3.32 | -27.42 | -25.42 | -16.35 |
| Co_2_12 | -7.47 | -7.86 | -24.97 | -26.95 | -21.70 |
| Co_2_13 | 1.90 | -0.11 | -19.92 | -16.81 | -12.15 |
| Co_2_14 | -9.67 | -2.35 | -24.72 | -27.94 | -11.20 |
| Co_2_16 | -5.91 | -1.45 | -23.46 | -20.04 | -12.15 |
| Co_2_17 | -14.91 | -5.06 | -21.83 | -22.97 | -26.90 |
| Co_2_18 | -11.91 | -3.30 | -18.55 | -25.56 | -22.31 |
| Co_2_19 | -6.79 | -0.81 | -16.46 | -19.23 | -11.49 |
| Co_2_20 | -4.25 | -1.95 | -14.48 | -19.14 | -19.18 |
| Co_2_21 | -3.83 | -2.65 | -8.22 | -19.91 | -16.80 |
| Co_2_22 | -4.21 | -1.07 | -14.36 | -14.49 | -18.82 |
| Co_3_0 | -9.25 | -4.86 | -25.38 | -25.24 | -27.19 |
| Co_3_1 | -3.11 | -5.27 | -23.49 | -26.40 | -22.34 |
| Co_3_2 | -4.57 | -1.42 | -21.78 | -19.41 | -21.64 |
| Co_3_3 | -0.15 | 0.73 | -14.73 | -18.05 | -20.67 |
| Co_3_4 | -10.70 | -1.08 | -28.42 | -21.82 | -24.28 |
| Co_3_5 | -5.17 | -6.06 | -24.54 | -21.73 | -25.51 |
| Co_3_6 | -5.80 | 4.11 | -20.60 | -17.72 | -26.42 |
| Co_3_8 | -5.14 | 1.01 | -20.59 | -15.59 | -20.57 |
| Co_3_9 | -3.51 | -6.45 | -26.68 | -25.42 | -22.58 |
| Co_3_10 | -3.04 | -3.53 | -20.96 | -25.73 | -21.62 |
| Co_3_11 | -5.13 | -2.41 | -23.56 | -17.84 | -18.84 |
| Co_3_12 | -3.40 | -2.47 | -19.60 | -22.92 | -16.03 |
| Co_3_13 | 3.55 | 3.24 | -6.98 | -14.45 | -4.84 |
| Co_3_14 | -3.99 | -2.73 | -23.88 | -24.15 | -19.23 |
| Co_3_16 | -9.90 | 0.21 | -25.79 | -21.22 | -27.19 |
| Co_3_17 | -4.74 | 0.97 | -23.01 | -17.00 | -20.11 |
| Co_3_18 | -8.87 | -3.78 | -20.45 | -21.79 | -26.55 |
| Co_3_19 | -6.97 | -2.80 | -21.01 | -23.60 | -19.91 |
| Co_3_20 | -4.79 | -0.07 | -11.05 | -17.55 | -17.65 |
| Co_3_21 | -1.13 | -6.78 | -15.15 | -17.76 | -15.63 |
| Co_3_22 | 1.70 | 4.09 | -7.15 | -12.39 | -16.34 |

| | | | | | |
|---------|--------|--------|--------|--------|--------|
| Co_4_0 | -13.48 | -4.68 | -29.29 | -29.52 | -28.28 |
| Co_4_1 | -5.91 | -3.53 | -25.51 | -21.32 | -25.98 |
| Co_4_2 | -10.57 | -5.02 | -23.83 | -31.82 | -26.74 |
| Co_4_3 | -5.88 | -1.81 | -19.20 | -18.41 | -20.98 |
| Co_4_4 | -11.53 | -2.80 | -24.80 | -27.63 | -22.99 |
| Co_4_5 | -8.46 | -6.08 | -28.20 | -27.92 | -26.20 |
| Co_4_6 | -12.12 | -4.83 | -28.84 | -29.14 | -23.58 |
| Co_4_7 | 5.39 | 0.11 | -15.65 | -16.55 | -16.71 |
| Co_4_8 | -12.32 | -9.12 | -25.34 | -29.35 | -26.90 |
| Co_4_9 | -9.49 | -4.21 | -21.61 | -21.67 | -24.36 |
| Co_4_10 | -9.41 | -8.91 | -25.32 | -19.47 | -26.11 |
| Co_4_11 | -9.32 | -7.44 | -25.49 | -26.25 | -19.68 |
| Co_4_12 | -12.76 | -9.13 | -27.55 | -26.96 | -25.58 |
| Co_4_13 | -5.23 | -1.24 | -9.63 | -21.89 | -15.04 |
| Co_4_14 | -9.60 | -5.04 | -27.58 | -25.09 | -25.29 |
| Co_4_16 | -14.16 | -5.78 | -31.48 | -19.88 | -24.80 |
| Co_4_17 | -18.25 | -12.82 | -33.22 | -23.12 | -27.82 |
| Co_4_18 | -17.15 | -14.85 | -35.48 | -31.82 | -27.96 |
| Co_4_19 | -9.77 | -1.37 | -29.93 | -21.15 | -17.44 |
| Co_4_20 | -14.04 | -6.12 | -24.61 | -25.12 | -22.42 |
| Co_4_21 | -6.62 | -1.19 | -22.67 | -16.31 | -24.34 |
| Co_4_22 | 1.42 | 1.32 | -13.78 | -18.36 | -13.10 |
| Co_5_0 | -12.14 | -4.73 | -30.65 | -29.52 | -29.93 |
| Co_5_1 | -8.49 | -7.16 | -25.71 | -31.37 | -30.51 |
| Co_5_2 | -2.91 | -6.93 | -20.64 | -23.76 | -28.02 |
| Co_5_3 | -0.68 | -2.39 | -16.13 | -20.09 | -24.23 |
| Co_5_4 | -12.60 | -3.78 | -30.64 | -26.98 | -22.59 |
| Co_5_5 | -9.71 | -2.64 | -27.56 | -25.97 | -22.32 |
| Co_5_6 | -19.30 | -13.68 | -30.77 | -32.00 | -27.80 |
| Co_5_7 | 8.11 | 10.77 | -3.30 | -12.74 | -12.95 |
| Co_5_8 | -8.99 | -8.20 | -26.70 | -21.93 | -23.68 |
| Co_5_9 | -11.00 | -7.20 | -25.77 | -21.93 | -27.26 |
| Co_5_10 | -11.88 | -6.44 | -30.52 | -23.50 | -25.43 |
| Co_5_11 | -10.32 | -9.63 | -29.30 | -24.13 | -23.61 |
| Co_5_12 | -10.99 | -5.42 | -30.26 | -23.54 | -23.76 |
| Co_5_13 | 3.37 | -5.98 | -8.22 | -20.34 | -17.21 |
| Co_5_14 | -9.28 | -8.38 | -24.64 | -26.42 | -23.91 |
| Co_5_16 | -10.57 | 0.91 | -30.86 | -19.97 | -21.17 |
| Co_5_17 | -13.29 | -6.01 | -26.91 | -23.89 | -23.40 |
| Co_5_18 | -15.16 | -16.17 | -26.75 | -20.55 | -24.71 |
| Co_5_19 | -13.58 | -9.27 | -31.33 | -24.98 | -22.54 |
| Co_5_20 | -15.86 | -6.66 | -25.27 | -23.10 | -23.47 |
| Co_5_21 | -8.22 | -2.74 | -26.40 | -24.41 | -24.38 |
| Co_5_22 | -0.75 | -2.83 | -12.92 | -17.94 | -21.88 |
| Co_6_0 | -11.44 | -4.55 | -27.79 | -24.37 | -23.78 |
| Co_6_1 | -4.63 | -3.94 | -24.50 | -18.70 | -24.82 |
| Co_6_2 | -0.90 | -4.46 | -18.75 | -21.23 | -26.38 |
| Co_6_3 | 3.39 | 5.95 | -20.34 | -16.68 | -18.81 |
| Co_6_4 | -11.61 | -13.33 | -26.70 | -22.78 | -23.56 |
| Co_6_5 | -13.42 | -3.36 | -30.52 | -22.92 | -20.69 |
| Co_6_6 | -11.29 | -6.55 | -24.96 | -18.68 | -21.96 |
| Co_6_7 | 5.63 | 12.82 | -1.90 | -10.75 | -9.51 |
| Co_6_8 | -3.77 | -9.79 | -28.10 | -19.03 | -22.46 |
| Co_6_9 | -6.43 | -6.90 | -23.74 | -20.08 | -19.51 |
| Co_6_10 | -8.60 | -8.44 | -27.97 | -28.16 | -27.02 |
| Co_6_11 | -7.85 | -2.20 | -23.78 | -24.76 | -20.98 |
| Co_6_12 | -11.71 | -6.79 | -33.22 | -29.95 | -29.18 |
| Co_6_13 | 2.24 | -3.13 | -22.30 | -19.93 | -21.31 |
| Co_6_14 | -12.15 | -0.72 | -31.93 | -18.32 | -27.56 |
| Co_6_15 | 19.00 | 9.90 | -19.29 | -16.43 | -5.22 |

| | | | | | |
|---------|--------|--------|--------|--------|--------|
| Co_6_16 | -11.80 | -8.85 | -34.04 | -26.34 | -25.18 |
| Co_6_17 | -14.49 | -10.71 | -30.60 | -27.50 | -20.47 |
| Co_6_18 | -15.11 | -8.97 | -36.05 | -29.29 | -30.95 |
| Co_6_19 | -12.33 | 0.23 | -27.90 | -18.82 | -24.63 |
| Co_6_20 | -11.28 | -9.44 | -33.75 | -19.99 | -25.23 |
| Co_6_21 | -2.96 | -2.62 | -23.65 | -20.81 | -28.24 |
| Co_6_22 | -8.09 | -3.20 | -19.03 | -25.42 | -20.40 |
| Co_7_0 | -6.35 | -4.79 | -29.07 | -21.70 | -22.80 |
| Co_7_1 | -0.28 | 0.88 | -13.92 | -22.55 | -17.68 |
| Co_7_2 | -6.21 | -11.04 | -27.96 | -27.66 | -21.32 |
| Co_7_3 | 17.65 | 11.96 | -0.85 | -12.87 | -3.53 |
| Co_7_4 | -11.83 | -1.67 | -19.72 | -22.13 | -25.28 |
| Co_7_5 | -3.04 | 2.99 | -15.91 | -25.71 | -22.33 |
| Co_7_6 | -3.35 | -0.61 | -15.95 | -11.56 | -21.56 |
| Co_7_8 | 9.71 | 0.02 | -7.15 | -10.56 | -12.69 |
| Co_7_9 | 5.38 | -0.44 | -15.06 | -14.27 | -14.92 |
| Co_7_10 | -2.29 | 3.01 | -14.33 | -15.92 | -17.09 |
| Co_7_11 | 5.30 | 1.28 | -18.00 | -23.85 | -16.27 |
| Co_7_12 | 1.69 | 7.93 | -14.84 | -14.60 | -18.44 |
| Co_7_14 | 3.08 | 5.28 | -17.49 | -20.77 | -23.07 |
| Co_7_16 | 1.38 | 4.77 | -20.86 | -19.12 | -15.04 |
| Co_7_17 | -0.67 | -0.50 | -17.46 | -18.76 | -15.57 |
| Co_7_18 | -2.91 | 1.69 | -18.56 | -19.96 | -17.23 |
| Co_7_21 | 7.88 | 7.07 | -11.14 | -13.65 | -9.46 |
| Co_7_22 | 3.69 | 5.51 | -17.01 | -20.39 | -18.88 |
| Co_8_0 | -12.43 | -6.94 | -31.74 | -26.46 | -25.58 |
| Co_8_1 | -6.76 | -7.52 | -31.84 | -25.48 | -23.63 |
| Co_8_2 | 0.08 | -3.29 | -16.57 | -23.50 | -21.31 |
| Co_8_3 | -7.35 | -7.17 | -31.51 | -24.38 | -18.49 |
| Co_8_4 | -11.93 | -10.58 | -29.57 | -20.55 | -22.71 |
| Co_8_5 | -10.04 | -1.39 | -18.90 | -25.53 | -19.45 |
| Co_8_6 | -12.05 | -1.62 | -30.96 | -19.92 | -24.08 |
| Co_8_7 | 15.45 | 11.06 | 1.19 | -18.69 | 6.99 |
| Co_8_8 | -10.36 | -6.96 | -29.24 | -25.12 | -22.53 |
| Co_8_9 | -9.49 | -7.44 | -23.65 | -21.05 | -23.57 |
| Co_8_10 | -9.68 | -7.33 | -28.14 | -23.13 | -21.90 |
| Co_8_11 | -10.58 | -8.47 | -26.65 | -26.16 | -21.78 |
| Co_8_12 | -10.00 | -2.20 | -29.61 | -24.58 | -23.72 |
| Co_8_13 | 0.77 | 1.82 | -16.39 | -16.03 | -7.78 |
| Co_8_14 | -11.00 | -2.09 | -30.99 | -23.56 | -24.65 |
| Co_8_15 | 8.81 | 8.25 | -11.19 | -11.25 | -2.64 |
| Co_8_16 | -11.86 | -5.29 | -24.70 | -25.39 | -25.67 |
| Co_8_17 | -15.20 | -1.88 | -33.26 | -21.97 | -23.49 |
| Co_8_18 | -13.37 | -9.30 | -31.60 | -28.98 | -23.22 |
| Co_8_19 | -13.30 | -6.53 | -27.79 | -22.33 | -25.15 |
| Co_8_20 | -5.37 | -3.09 | -27.94 | -19.54 | -20.74 |
| Co_8_21 | -11.20 | -13.13 | -31.53 | -34.34 | -24.10 |
| Co_8_22 | -8.00 | -5.83 | -27.59 | -28.84 | -23.99 |
| Co_9_0 | -12.46 | -7.26 | -28.26 | -27.36 | -23.88 |
| Co_9_1 | -3.90 | -3.32 | -26.80 | -26.74 | -22.15 |
| Co_9_2 | -3.96 | -1.46 | -17.68 | -21.78 | -20.87 |
| Co_9_3 | -1.60 | 0.43 | -16.12 | -18.92 | -20.93 |
| Co_9_4 | -10.88 | -8.35 | -28.93 | -26.39 | -24.53 |
| Co_9_5 | -12.15 | -4.32 | -26.03 | -25.10 | -25.14 |
| Co_9_6 | 2.72 | -0.15 | -30.41 | -28.97 | -24.34 |
| Co_9_8 | -11.56 | -2.70 | -30.83 | -27.83 | -23.80 |
| Co_9_9 | -9.96 | -2.51 | -26.40 | -21.14 | -25.22 |
| Co_9_10 | -11.32 | -3.20 | -23.33 | -28.53 | -24.58 |
| Co_9_11 | -10.88 | -0.44 | -29.40 | -21.61 | -22.29 |
| Co_9_12 | -11.75 | -8.76 | -30.18 | -27.16 | -23.93 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Co_9_13 | -4.27 | -1.72 | -20.96 | -14.69 | -16.79 |
| Co_9_14 | -10.70 | -1.44 | -29.43 | -25.55 | -24.31 |
| Co_9_15 | 0.61 | -3.99 | -23.39 | -22.79 | -10.09 |
| Co_9_16 | -8.74 | -5.75 | -25.06 | -26.61 | -22.47 |
| Co_9_17 | -15.96 | -4.22 | -31.02 | -29.82 | -23.22 |
| Co_9_18 | -14.21 | -2.15 | -25.66 | -20.76 | -23.85 |
| Co_9_19 | -14.16 | -6.56 | -22.48 | -27.28 | -26.13 |
| Co_9_20 | -9.94 | -6.66 | -26.57 | -20.28 | -23.84 |
| Co_9_21 | -10.90 | -6.91 | -19.05 | -21.72 | -26.01 |
| Co_9_22 | 4.96 | 0.21 | -13.21 | -19.44 | -15.57 |
| Co_10_0 | -12.91 | -5.74 | -29.48 | -27.50 | -23.72 |
| Co_10_1 | -7.16 | -6.78 | -30.47 | -26.33 | -25.92 |
| Co_10_2 | -6.68 | -1.66 | -20.58 | -23.17 | -22.22 |
| Co_10_3 | 2.93 | 6.27 | -11.08 | -12.47 | -6.80 |
| Co_10_4 | -12.47 | -5.99 | -32.78 | -23.62 | -26.35 |
| Co_10_5 | -9.46 | -8.82 | -24.79 | -18.42 | -22.23 |
| Co_10_6 | -7.06 | -4.94 | -24.82 | -15.76 | -23.14 |
| Co_10_8 | -10.58 | -1.65 | -27.88 | -26.40 | -23.42 |
| Co_10_9 | -9.77 | 0.06 | -25.99 | -22.40 | -19.54 |
| Co_10_10 | -11.18 | -7.84 | -29.32 | -24.34 | -23.74 |
| Co_10_11 | -11.34 | -1.88 | -29.57 | -24.46 | -24.00 |
| Co_10_12 | -9.77 | -5.87 | -29.12 | -20.79 | -22.74 |
| Co_10_13 | -2.96 | 4.84 | -13.63 | -18.20 | -11.22 |
| Co_10_14 | -10.84 | -2.36 | -29.91 | -24.80 | -19.08 |
| Co_10_15 | 7.65 | 2.99 | -11.95 | -15.96 | -0.24 |
| Co_10_16 | -11.73 | -2.83 | -19.91 | -27.49 | -22.17 |
| Co_10_17 | -14.41 | -6.58 | -26.90 | -27.06 | -27.46 |
| Co_10_18 | -17.40 | -12.05 | -27.73 | -29.07 | -27.82 |
| Co_10_19 | -13.30 | -11.63 | -29.16 | -23.34 | -25.72 |
| Co_10_20 | -10.04 | -4.25 | -25.46 | -21.38 | -23.53 |
| Co_10_21 | -9.89 | -0.51 | -22.07 | -19.86 | -25.65 |
| Co_10_22 | 0.54 | -5.56 | -16.23 | -24.33 | -21.17 |
| Co_11_0 | -13.67 | -5.12 | -32.29 | -24.83 | -22.89 |
| Co_11_1 | -5.13 | -5.13 | -26.00 | -21.24 | -23.60 |
| Co_11_2 | -4.92 | 1.93 | -16.34 | -23.58 | -20.43 |
| Co_11_3 | -3.58 | -8.14 | -19.71 | -20.48 | -19.91 |
| Co_11_4 | -13.20 | -10.65 | -33.25 | -30.49 | -24.26 |
| Co_11_5 | -7.81 | -3.48 | -22.27 | -23.68 | -21.74 |
| Co_11_6 | -12.49 | -6.01 | -27.41 | -24.18 | -24.69 |
| Co_11_7 | 10.28 | -2.57 | 0.14 | -19.30 | -11.41 |
| Co_11_8 | -10.33 | -1.55 | -29.28 | -23.11 | -23.10 |
| Co_11_9 | -10.37 | -1.78 | -28.06 | -20.59 | -19.89 |
| Co_11_10 | -10.63 | 0.19 | -23.10 | -26.02 | -21.30 |
| Co_11_11 | -10.81 | -8.82 | -29.07 | -27.50 | -21.59 |
| Co_11_12 | -10.49 | 0.77 | -25.21 | -25.84 | -22.94 |
| Co_11_13 | 3.04 | 2.03 | -15.17 | -12.79 | -8.80 |
| Co_11_14 | -11.39 | 0.94 | -28.86 | -26.57 | -21.44 |
| Co_11_15 | 7.10 | 3.05 | -14.48 | 2.18 | -11.30 |
| Co_11_16 | -13.34 | -7.47 | -28.42 | -22.73 | -25.55 |
| Co_11_17 | -16.62 | -13.29 | -30.57 | -34.58 | -21.79 |
| Co_11_18 | -11.49 | 3.09 | -23.89 | -26.93 | -23.91 |
| Co_11_19 | -12.37 | -10.87 | -24.42 | -22.86 | -20.26 |
| Co_11_20 | -13.92 | -4.99 | -27.32 | -19.41 | -24.88 |
| Co_11_21 | -9.73 | -1.74 | -18.89 | -20.19 | -23.31 |
| Co_11_22 | 2.87 | -3.72 | -23.76 | -22.41 | -17.95 |
| Co_12_0 | -13.06 | -7.77 | -30.58 | -31.22 | -27.12 |
| Co_12_1 | -10.04 | -4.85 | -24.90 | -27.47 | -21.83 |
| Co_12_2 | -3.81 | -1.54 | -20.13 | -17.29 | -17.71 |
| Co_12_3 | 4.00 | 1.32 | -21.44 | -18.52 | -19.02 |
| Co_12_4 | -12.72 | -7.93 | -31.46 | -29.39 | -24.09 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Co_12_5 | -12.12 | -2.34 | -22.26 | -24.01 | -22.76 |
| Co_12_6 | -7.02 | -6.88 | -25.71 | -26.06 | -23.83 |
| Co_12_7 | 15.52 | 15.50 | -1.01 | -12.10 | -1.74 |
| Co_12_8 | -10.46 | -1.57 | -29.49 | -25.42 | -24.02 |
| Co_12_9 | -9.98 | -7.48 | -29.22 | -25.34 | -23.02 |
| Co_12_10 | -11.01 | -8.58 | -25.19 | -23.90 | -23.52 |
| Co_12_11 | -11.12 | -0.80 | -23.30 | -28.72 | -23.44 |
| Co_12_12 | -10.96 | -1.11 | -30.50 | -21.61 | -24.24 |
| Co_12_13 | -1.69 | -6.20 | -10.58 | -21.16 | -15.10 |
| Co_12_14 | -7.20 | -7.33 | -29.84 | -26.77 | -21.44 |
| Co_12_15 | 8.11 | 1.85 | -10.03 | -23.00 | -11.26 |
| Co_12_16 | -12.62 | -4.58 | -30.39 | -28.20 | -23.98 |
| Co_12_17 | -13.16 | -7.16 | -25.55 | -19.65 | -27.25 |
| Co_12_18 | -12.40 | -14.34 | -27.82 | -24.66 | -29.04 |
| Co_12_19 | -17.11 | -7.73 | -35.32 | -24.36 | -28.43 |
| Co_12_20 | -6.43 | -9.12 | -23.09 | -21.51 | -18.15 |
| Co_12_21 | -11.08 | -8.96 | -26.61 | -20.93 | -21.06 |
| Co_12_22 | 1.09 | -2.89 | -25.46 | -26.59 | -19.52 |
| Co_13_0 | -4.06 | -8.00 | -25.23 | -27.55 | -24.15 |
| Co_13_1 | -10.81 | -4.53 | -18.08 | -29.86 | -20.81 |
| Co_13_2 | 3.76 | 0.10 | -22.99 | -22.64 | -18.36 |
| Co_13_4 | -10.44 | -7.57 | -26.24 | -22.25 | -20.10 |
| Co_13_5 | -11.94 | -11.89 | -17.76 | -27.69 | -19.00 |
| Co_13_6 | -4.03 | 0.58 | -10.89 | -15.12 | -12.00 |
| Co_13_8 | -10.09 | -11.82 | -28.85 | -28.48 | -23.04 |
| Co_13_9 | -4.89 | -1.66 | -23.11 | -21.79 | -18.14 |
| Co_13_10 | -1.41 | -0.72 | -17.38 | -15.42 | -13.60 |
| Co_13_11 | -6.31 | -5.34 | -25.06 | -23.18 | -18.00 |
| Co_13_12 | -3.82 | -2.83 | -25.06 | -24.81 | -16.94 |
| Co_13_13 | 5.26 | -1.26 | -10.30 | -11.06 | -6.46 |
| Co_13_14 | -0.61 | -1.29 | -20.36 | -23.91 | -17.95 |
| Co_13_16 | -8.88 | -0.82 | -23.17 | -24.08 | -22.73 |
| Co_13_17 | -13.31 | -8.72 | -20.60 | -30.49 | -20.96 |
| Co_13_18 | -11.35 | -4.83 | -26.99 | -21.69 | -23.67 |
| Co_13_19 | -9.34 | 2.23 | -20.59 | -18.89 | -18.34 |
| Co_13_20 | -3.81 | -0.69 | -20.79 | -14.69 | -17.53 |
| Co_13_21 | -6.68 | -5.54 | -19.27 | -25.47 | -20.75 |
| Co_13_22 | 1.75 | -0.17 | -12.26 | -13.17 | -16.36 |
| Co_14_0 | -13.53 | -7.51 | -31.60 | -26.98 | -25.62 |
| Co_14_1 | -10.34 | -3.81 | -22.07 | -23.50 | -24.03 |
| Co_14_2 | -8.30 | -1.48 | -24.39 | -22.74 | -15.92 |
| Co_14_3 | -3.08 | -0.03 | -12.94 | -19.43 | -14.29 |
| Co_14_4 | -11.83 | -6.24 | -26.60 | -27.33 | -22.27 |
| Co_14_5 | -6.01 | -3.36 | -21.27 | -26.68 | -21.50 |
| Co_14_6 | -9.83 | -7.00 | -24.30 | -19.97 | -23.53 |
| Co_14_7 | 7.95 | 9.21 | -9.11 | -17.29 | -11.74 |
| Co_14_8 | -9.35 | -0.17 | -28.23 | -20.71 | -18.90 |
| Co_14_9 | -9.50 | -1.02 | -26.40 | -24.00 | -23.08 |
| Co_14_10 | -9.03 | -6.98 | -29.90 | -21.35 | -19.65 |
| Co_14_11 | -11.18 | -10.11 | -30.15 | -23.92 | -22.17 |
| Co_14_12 | -8.35 | -0.60 | -28.02 | -20.94 | -20.58 |
| Co_14_13 | 5.80 | -2.43 | -14.26 | -13.78 | -17.16 |
| Co_14_14 | -10.05 | -0.43 | -24.54 | -23.74 | -22.73 |
| Co_14_16 | -10.56 | -3.97 | -22.94 | -24.45 | -21.84 |
| Co_14_17 | -12.76 | -8.36 | -27.88 | -26.41 | -21.57 |
| Co_14_18 | -11.93 | -5.01 | -26.48 | -24.09 | -24.80 |
| Co_14_19 | -13.69 | -3.97 | -27.13 | -28.14 | -25.45 |
| Co_14_20 | -7.27 | -0.80 | -24.87 | -18.08 | -22.59 |
| Co_14_21 | -10.93 | -2.78 | -26.49 | -23.98 | -21.15 |
| Co_14_22 | -4.27 | -3.29 | -17.02 | -22.06 | -18.61 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Co_15_0 | -15.15 | -10.69 | -32.09 | -29.38 | -22.88 |
| Co_15_1 | -6.33 | -4.31 | -21.37 | -27.78 | -23.55 |
| Co_15_2 | -10.40 | 0.65 | -20.39 | -26.53 | -25.03 |
| Co_15_4 | -16.72 | -15.53 | -35.22 | -30.78 | -35.86 |
| Co_15_5 | -3.44 | 1.18 | -17.75 | -18.64 | -10.44 |
| Co_15_6 | 1.19 | -0.19 | -15.02 | -12.80 | -11.28 |
| Co_15_8 | -7.87 | -2.96 | -26.48 | -19.12 | -21.62 |
| Co_15_9 | -1.63 | -2.72 | -20.26 | -26.52 | -18.02 |
| Co_15_10 | -7.98 | -4.01 | -19.70 | -21.35 | -19.81 |
| Co_15_11 | -1.32 | -5.04 | -21.32 | -20.67 | -16.27 |
| Co_15_12 | -4.69 | -0.77 | -11.87 | -17.38 | -17.88 |
| Co_15_13 | 10.64 | -10.01 | -11.77 | -18.62 | -14.11 |
| Co_15_16 | -14.54 | -2.81 | -25.30 | -27.41 | -27.97 |
| Co_15_17 | -7.20 | -4.58 | -23.26 | -14.20 | -21.93 |
| Co_15_18 | -10.20 | -6.72 | -25.95 | -16.81 | -20.67 |
| Co_15_19 | -9.25 | -0.72 | -20.86 | -8.47 | -18.84 |
| Co_15_20 | -2.38 | 1.07 | -23.60 | -19.34 | -23.36 |
| Co_15_21 | -2.58 | -4.31 | -11.75 | -18.76 | -5.12 |
| Co_15_22 | 10.98 | 1.23 | -14.21 | -15.99 | -16.24 |
| Co_16_0 | -11.10 | -10.24 | -24.47 | -24.57 | -25.01 |
| Co_16_1 | -4.32 | 2.25 | -18.21 | -23.96 | -23.93 |
| Co_16_2 | -1.73 | 0.79 | -16.26 | -21.38 | -21.24 |
| Co_16_3 | -1.01 | 4.18 | -13.15 | -14.63 | -14.72 |
| Co_16_4 | -12.57 | -4.91 | -27.21 | -24.03 | -24.13 |
| Co_16_5 | -8.77 | -3.90 | -31.05 | -24.35 | -23.13 |
| Co_16_6 | -5.79 | -5.05 | -17.50 | -16.83 | -18.59 |
| Co_16_7 | 14.68 | 6.40 | -1.22 | -14.35 | -12.30 |
| Co_16_8 | -10.64 | 0.62 | -27.84 | -20.37 | -21.20 |
| Co_16_9 | -6.29 | -3.04 | -21.84 | -25.43 | -19.18 |
| Co_16_10 | -11.14 | -5.75 | -23.02 | -26.02 | -23.70 |
| Co_16_11 | -9.12 | -2.37 | -27.84 | -20.99 | -19.18 |
| Co_16_12 | -8.42 | -1.29 | -24.06 | -21.07 | -24.06 |
| Co_16_13 | -1.50 | -0.86 | -12.93 | -12.19 | -13.50 |
| Co_16_14 | -13.84 | -12.41 | -28.54 | -25.75 | -28.67 |
| Co_16_16 | -15.88 | -5.94 | -29.68 | -27.85 | -21.57 |
| Co_16_17 | -12.69 | -4.54 | -31.66 | -27.06 | -22.99 |
| Co_16_18 | -14.75 | -1.17 | -22.85 | -25.55 | -23.85 |
| Co_16_19 | -14.71 | -14.12 | -27.75 | -18.36 | -23.09 |
| Co_16_20 | -15.55 | -4.73 | -28.26 | -23.39 | -24.78 |
| Co_16_21 | -1.24 | -2.90 | -14.52 | -14.02 | -13.00 |
| Co_16_22 | -2.38 | -2.52 | -20.53 | -18.31 | -16.81 |
| Co_17_0 | -11.33 | -7.18 | -30.50 | -24.50 | -25.75 |
| Co_17_1 | -9.11 | -7.24 | -25.54 | -23.06 | -26.88 |
| Co_17_2 | -3.73 | -3.64 | -19.62 | -21.32 | -20.39 |
| Co_17_3 | -7.30 | -5.21 | -17.12 | -24.28 | -25.31 |
| Co_17_4 | -9.53 | -2.10 | -23.70 | -24.92 | -20.47 |
| Co_17_5 | -9.77 | -12.22 | -22.92 | -31.60 | -24.36 |
| Co_17_6 | -5.58 | -8.25 | -29.75 | -26.08 | -19.68 |
| Co_17_7 | 13.83 | 8.12 | -2.84 | -6.48 | -10.53 |
| Co_17_8 | -7.12 | -7.23 | -28.64 | -18.41 | -23.24 |
| Co_17_9 | -11.23 | -9.90 | -26.05 | -23.57 | -26.95 |
| Co_17_10 | -9.50 | -7.85 | -26.34 | -25.35 | -21.97 |
| Co_17_11 | -10.51 | -7.95 | -27.76 | -24.13 | -23.35 |
| Co_17_12 | -11.16 | -2.58 | -29.21 | -23.15 | -26.95 |
| Co_17_13 | -2.62 | 0.52 | -14.38 | -18.97 | -12.26 |
| Co_17_14 | -10.49 | -5.66 | -24.76 | -23.62 | -19.78 |
| Co_17_15 | 1.38 | -3.11 | -17.67 | -22.34 | -9.71 |
| Co_17_16 | -12.80 | -7.32 | -27.77 | -20.99 | -20.93 |
| Co_17_17 | -18.89 | -9.53 | -34.89 | -33.63 | -22.58 |
| Co_17_18 | -18.27 | -11.92 | -37.53 | -26.23 | -24.76 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Co_17_19 | -15.57 | -3.62 | -31.31 | -21.16 | -22.57 |
| Co_17_20 | -13.41 | -6.24 | -22.89 | -17.46 | -22.20 |
| Co_17_21 | -3.06 | -0.39 | -16.61 | -20.77 | -21.96 |
| Co_17_22 | -1.34 | -0.87 | -3.64 | -18.90 | -18.78 |
| Co_18_0 | -8.76 | -3.58 | -23.43 | -28.22 | -24.82 |
| Co_18_1 | -5.94 | -0.92 | -19.29 | -18.48 | -21.09 |
| Co_18_2 | 0.71 | -6.00 | -17.49 | -21.84 | -21.24 |
| Co_18_3 | 2.23 | 3.43 | -9.48 | -12.84 | -17.29 |
| Co_18_4 | -13.72 | -3.16 | -25.86 | -18.46 | -21.31 |
| Co_18_5 | -6.19 | -7.94 | -23.71 | -23.15 | -23.42 |
| Co_18_6 | -7.56 | -3.47 | -24.32 | -24.02 | -20.26 |
| Co_18_7 | 11.82 | 16.43 | -6.13 | -11.62 | -8.09 |
| Co_18_8 | -8.27 | -9.54 | -28.25 | -23.19 | -26.72 |
| Co_18_9 | -10.21 | -10.78 | -26.75 | -27.12 | -26.37 |
| Co_18_10 | -12.60 | -1.89 | -29.95 | -24.73 | -26.82 |
| Co_18_11 | -8.47 | -7.08 | -24.73 | -20.50 | -21.40 |
| Co_18_12 | -7.41 | -8.63 | -29.15 | -25.07 | -22.33 |
| Co_18_13 | -3.68 | 3.43 | -6.08 | -15.70 | -20.21 |
| Co_18_14 | -12.39 | -3.81 | -22.63 | -20.50 | -24.58 |
| Co_18_15 | -2.09 | -10.65 | -25.15 | -24.02 | -11.73 |
| Co_18_16 | -15.09 | -11.83 | -30.37 | -23.20 | -25.39 |
| Co_18_17 | -13.61 | -13.79 | -30.06 | -31.00 | -20.97 |
| Co_18_18 | -17.20 | -4.56 | -31.19 | -28.78 | -26.46 |
| Co_18_19 | -17.38 | -5.95 | -25.15 | -29.77 | -25.24 |
| Co_18_20 | -9.74 | 5.90 | -22.21 | -19.18 | -18.68 |
| Co_18_21 | -7.13 | -4.35 | -18.85 | -24.61 | -21.46 |
| Co_18_22 | -1.64 | 3.61 | -13.31 | -17.04 | -14.82 |
| Co_19_0 | -13.74 | -10.41 | -34.17 | -25.51 | -30.63 |
| Co_19_1 | -4.15 | -5.14 | -20.32 | -18.67 | -22.52 |
| Co_19_2 | 1.03 | 0.49 | -18.52 | -21.84 | -20.98 |
| Co_19_3 | -1.46 | -1.64 | -16.42 | -19.11 | -16.10 |
| Co_19_4 | -10.57 | -3.19 | -27.90 | -23.74 | -21.95 |
| Co_19_5 | -6.63 | -1.61 | -24.54 | -22.67 | -22.20 |
| Co_19_6 | -3.00 | -3.23 | -26.73 | -24.61 | -20.77 |
| Co_19_8 | -10.64 | -2.80 | -28.06 | -22.17 | -23.61 |
| Co_19_9 | -8.87 | 0.98 | -27.36 | -19.86 | -25.42 |
| Co_19_10 | -8.27 | -8.64 | -19.64 | -24.03 | -21.87 |
| Co_19_11 | -8.27 | -2.14 | -24.15 | -18.84 | -18.60 |
| Co_19_12 | -9.47 | -3.70 | -27.22 | -19.90 | -18.95 |
| Co_19_13 | -5.91 | -2.48 | -19.75 | -21.58 | -23.50 |
| Co_19_14 | -10.44 | -8.38 | -27.26 | -25.53 | -26.86 |
| Co_19_15 | -1.22 | -0.12 | -18.46 | -19.98 | -18.54 |
| Co_19_16 | -13.74 | -5.27 | -31.28 | -30.48 | -26.13 |
| Co_19_17 | -14.20 | -14.90 | -33.74 | -23.45 | -24.11 |
| Co_19_18 | -10.38 | -2.45 | -27.02 | -22.28 | -22.32 |
| Co_19_19 | -17.43 | -8.36 | -28.62 | -29.31 | -19.53 |
| Co_19_20 | -11.88 | -6.06 | -31.12 | -19.48 | -25.12 |
| Co_19_21 | -10.04 | -7.97 | -25.86 | -25.18 | -23.38 |
| Co_19_22 | -2.04 | -1.83 | -14.87 | -20.33 | -11.70 |
| Co_20_0 | -10.33 | -5.69 | -25.49 | -23.96 | -24.28 |
| Co_20_1 | -7.41 | -3.65 | -26.16 | -25.63 | -24.50 |
| Co_20_2 | -1.36 | -6.30 | -22.02 | -21.64 | -12.40 |
| Co_20_3 | -0.70 | 1.08 | -7.83 | -14.64 | -15.58 |
| Co_20_4 | -11.71 | -3.15 | -32.82 | -32.93 | -26.57 |
| Co_20_5 | -6.79 | -11.61 | -26.22 | -27.06 | -17.59 |
| Co_20_6 | -8.87 | -3.85 | -18.11 | -23.59 | -21.52 |
| Co_20_7 | 6.23 | 2.28 | -5.65 | -8.49 | -11.86 |
| Co_20_8 | -8.88 | -8.12 | -29.14 | -22.79 | -22.55 |
| Co_20_9 | -8.08 | -2.34 | -25.23 | -22.86 | -24.63 |
| Co_20_10 | -8.48 | 2.49 | -27.10 | -21.49 | -26.84 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Co_20_11 | -10.85 | -2.52 | -25.67 | -24.20 | -23.96 |
| Co_20_12 | -11.47 | -9.16 | -22.79 | -27.34 | -24.17 |
| Co_20_13 | -7.55 | -4.31 | -21.75 | -21.49 | -18.59 |
| Co_20_14 | -10.31 | -5.27 | -27.75 | -17.56 | -28.66 |
| Co_20_15 | 4.96 | 10.30 | -2.89 | -10.81 | -13.70 |
| Co_20_16 | -15.11 | -6.45 | -29.39 | -25.21 | -25.33 |
| Co_20_17 | -14.29 | -5.05 | -28.65 | -21.01 | -22.75 |
| Co_20_18 | -10.89 | -7.49 | -29.29 | -31.71 | -17.07 |
| Co_20_19 | -14.36 | -12.76 | -27.49 | -19.24 | -22.96 |
| Co_20_20 | -4.29 | -3.34 | -24.38 | -14.27 | -19.57 |
| Co_20_21 | -7.69 | -4.97 | -19.06 | -25.66 | -22.23 |
| Co_21_0 | -12.16 | -7.08 | -26.00 | -26.36 | -27.61 |
| Co_21_1 | -8.68 | -3.41 | -21.03 | -20.98 | -26.46 |
| Co_21_2 | 0.72 | -4.74 | -24.16 | -19.75 | -19.89 |
| Co_21_3 | 2.93 | -1.83 | -14.81 | -21.30 | -17.88 |
| Co_21_4 | -8.14 | -5.53 | -22.44 | -25.14 | -26.17 |
| Co_21_5 | -10.38 | -8.22 | -24.57 | -21.58 | -25.81 |
| Co_21_6 | -5.26 | 3.03 | -24.22 | -12.47 | -25.30 |
| Co_21_8 | -7.20 | -2.44 | -26.23 | -23.20 | -21.74 |
| Co_21_9 | -8.44 | -7.04 | -26.27 | -27.22 | -23.81 |
| Co_21_10 | -6.58 | -3.74 | -31.21 | -32.41 | -24.81 |
| Co_21_11 | -9.76 | -2.68 | -23.12 | -28.54 | -22.02 |
| Co_21_12 | -8.41 | -5.45 | -25.14 | -27.12 | -23.38 |
| Co_21_13 | 0.19 | 0.74 | -14.23 | -15.38 | -12.43 |
| Co_21_14 | -13.32 | -8.72 | -32.72 | -28.09 | -30.90 |
| Co_21_15 | 11.93 | 8.41 | -10.21 | -26.69 | -4.46 |
| Co_21_16 | -15.60 | -5.70 | -33.28 | -33.21 | -24.82 |
| Co_21_17 | -14.27 | -5.33 | -27.82 | -29.16 | -25.47 |
| Co_21_18 | -10.17 | -1.33 | -23.96 | -22.03 | -18.00 |
| Co_21_19 | -11.36 | -6.46 | -16.87 | -20.20 | -24.21 |
| Co_21_20 | -7.90 | -4.15 | -18.72 | -21.55 | -18.76 |
| Co_21_21 | 1.46 | -2.48 | -16.25 | -19.21 | -22.83 |
| Co_21_22 | 1.13 | 1.80 | -11.97 | -20.68 | -15.36 |
| Co_22_0 | -6.73 | -7.40 | -30.40 | -25.85 | -25.29 |
| Co_22_1 | -3.43 | -1.12 | -11.90 | -24.28 | -22.13 |
| Co_22_2 | 7.36 | 2.06 | -9.60 | -21.58 | -17.08 |
| Co_22_3 | 0.28 | 1.77 | -14.98 | -17.95 | -20.29 |
| Co_22_4 | -10.21 | -7.58 | -27.23 | -22.57 | -27.16 |
| Co_22_5 | -5.63 | -1.39 | -25.96 | -18.43 | -25.14 |
| Co_22_6 | -6.53 | -0.98 | -22.51 | -17.35 | -22.49 |
| Co_22_8 | -9.56 | -1.84 | -23.87 | -25.12 | -25.67 |
| Co_22_9 | -9.81 | -5.31 | -27.99 | -25.98 | -22.42 |
| Co_22_10 | -8.14 | -4.00 | -25.45 | -23.86 | -21.86 |
| Co_22_11 | -4.22 | -3.97 | -20.95 | -22.88 | -17.87 |
| Co_22_12 | -7.71 | -4.95 | -25.47 | -29.73 | -23.60 |
| Co_22_13 | 1.90 | -2.40 | -6.80 | -17.74 | -6.28 |
| Co_22_14 | -10.32 | -4.25 | -22.59 | -30.11 | -23.09 |
| Co_22_16 | -9.36 | -9.18 | -28.89 | -25.84 | -19.70 |
| Co_22_17 | -9.64 | 0.42 | -23.22 | -18.19 | -20.75 |
| Co_22_18 | -8.32 | -5.15 | -17.12 | -20.54 | -21.80 |
| Co_22_19 | -13.49 | -1.47 | -30.44 | -24.12 | -25.48 |
| Co_22_20 | -9.32 | 1.18 | -21.71 | -27.27 | -22.45 |
| Co_22_21 | 2.99 | -5.23 | -23.92 | -23.96 | -18.68 |
| Co_22_22 | -1.04 | -2.78 | -12.38 | -15.28 | -15.42 |
| Rh_0_0 | -1.74 | -6.27 | -16.49 | -23.69 | -20.73 |
| Rh_0_1 | -0.08 | -5.18 | -15.51 | -22.75 | -16.12 |
| Rh_0_2 | -1.38 | -5.72 | -14.15 | -25.79 | -19.05 |
| Rh_0_3 | 4.65 | -5.34 | -5.30 | -19.15 | -12.90 |
| Rh_0_4 | -1.13 | -5.61 | -17.45 | -20.64 | -17.87 |
| Rh_0_5 | 0.60 | -3.80 | -10.15 | -17.42 | -16.04 |

| | | | | | |
|---------|-------|-------|--------|--------|--------|
| Rh_0_6 | 3.79 | -1.86 | -18.98 | -21.93 | -20.79 |
| Rh_0_7 | 7.91 | -3.81 | -7.22 | -16.26 | -13.38 |
| Rh_0_8 | -2.17 | -6.08 | -15.67 | -22.14 | -16.63 |
| Rh_0_9 | -4.31 | -8.90 | -18.89 | -27.21 | -19.70 |
| Rh_0_10 | -3.07 | -6.47 | -16.55 | -23.66 | -16.82 |
| Rh_0_11 | -4.48 | -8.02 | -21.39 | -24.71 | -20.02 |
| Rh_0_12 | -1.69 | -6.65 | -14.04 | -21.85 | -15.92 |
| Rh_0_13 | 1.94 | -6.87 | -10.80 | -21.12 | -9.47 |
| Rh_0_14 | -2.50 | -6.36 | -17.24 | -23.35 | -18.02 |
| Rh_0_15 | 4.30 | -9.74 | -8.99 | -26.01 | -15.73 |
| Rh_0_16 | -1.55 | -4.45 | -13.04 | -25.52 | -16.63 |
| Rh_0_17 | -3.09 | -1.73 | -15.28 | -21.48 | -10.07 |
| Rh_0_18 | -0.12 | -0.49 | -11.18 | -19.60 | -14.57 |
| Rh_0_19 | -0.09 | -4.39 | -16.19 | -23.29 | -14.27 |
| Rh_0_20 | -3.47 | -2.28 | -7.86 | -19.82 | -12.51 |
| Rh_0_21 | 3.86 | -7.56 | -13.13 | -24.47 | -14.59 |
| Rh_0_22 | 7.94 | -3.84 | -7.27 | -19.75 | -15.21 |
| Rh_1_0 | -0.90 | -5.03 | -16.55 | -24.31 | -19.64 |
| Rh_1_1 | 5.15 | -4.03 | -13.65 | -22.07 | -17.21 |
| Rh_1_2 | 1.68 | -1.63 | -9.97 | -20.00 | -16.34 |
| Rh_1_3 | 6.25 | -3.29 | -8.54 | -19.07 | -11.29 |
| Rh_1_4 | -0.83 | -5.99 | -17.72 | -23.38 | -17.97 |
| Rh_1_5 | 0.33 | -0.71 | -9.12 | -17.33 | -17.40 |
| Rh_1_6 | 8.10 | 2.73 | -9.73 | -15.68 | -17.63 |
| Rh_1_7 | 19.47 | 8.52 | 7.65 | -5.86 | -8.37 |
| Rh_1_8 | -1.88 | -7.55 | -15.07 | -23.82 | -16.02 |
| Rh_1_9 | -3.13 | -6.60 | -12.81 | -22.41 | -14.78 |
| Rh_1_10 | -1.71 | -7.21 | -16.52 | -22.26 | -16.06 |
| Rh_1_11 | -1.26 | -5.61 | -16.13 | -19.04 | -17.93 |
| Rh_1_12 | -0.77 | -4.45 | -15.06 | -23.22 | -17.33 |
| Rh_1_13 | 11.23 | -2.35 | -4.97 | -20.40 | 3.64 |
| Rh_1_14 | -0.83 | -5.27 | -14.98 | -21.93 | -14.37 |
| Rh_1_16 | -1.93 | -7.15 | -11.25 | -26.14 | -16.62 |
| Rh_1_17 | 2.49 | -5.13 | -9.57 | -15.02 | -8.21 |
| Rh_1_18 | 3.84 | -0.72 | -9.39 | -11.00 | -10.26 |
| Rh_1_19 | -2.21 | -6.33 | -13.43 | -18.55 | -15.69 |
| Rh_1_20 | 2.67 | -6.55 | -9.66 | -23.81 | -10.80 |
| Rh_1_21 | 2.05 | -2.56 | -10.61 | -21.48 | -11.81 |
| Rh_1_22 | 9.54 | -4.08 | -8.62 | -16.69 | -10.54 |
| Rh_2_0 | 0.58 | -6.10 | -12.77 | -21.64 | -18.21 |
| Rh_2_1 | 6.35 | -5.19 | -10.73 | -25.04 | -15.96 |
| Rh_2_2 | 3.60 | -1.06 | -8.10 | -17.85 | -11.80 |
| Rh_2_3 | 0.78 | -5.18 | -8.97 | -18.56 | -15.06 |
| Rh_2_4 | -3.07 | -6.64 | -9.81 | -20.46 | -12.39 |
| Rh_2_5 | 4.34 | -6.55 | -5.66 | -21.81 | -12.38 |
| Rh_2_6 | 5.63 | -1.16 | -10.55 | -15.78 | -14.99 |
| Rh_2_7 | 11.72 | 2.38 | -2.71 | -0.98 | -4.05 |
| Rh_2_8 | 2.11 | -5.50 | -11.33 | -22.48 | -18.62 |
| Rh_2_9 | 1.89 | -4.88 | -15.58 | -26.18 | -19.52 |
| Rh_2_10 | -1.46 | -7.32 | -16.89 | -21.51 | -12.39 |
| Rh_2_11 | -0.10 | -5.45 | -17.03 | -21.56 | -11.49 |
| Rh_2_12 | -0.41 | -6.27 | -13.83 | -23.40 | -15.20 |
| Rh_2_13 | 7.42 | -1.92 | -9.73 | -14.05 | -4.97 |
| Rh_2_14 | -3.32 | -3.07 | -13.23 | -24.93 | -6.39 |
| Rh_2_16 | 0.09 | -0.52 | -12.77 | -21.30 | -7.88 |
| Rh_2_17 | -3.99 | -3.68 | -10.77 | -19.47 | -17.19 |
| Rh_2_18 | -0.92 | -2.89 | -6.59 | -21.31 | -12.72 |
| Rh_2_19 | 1.21 | -1.92 | -6.00 | -18.89 | -4.99 |
| Rh_2_20 | 5.39 | -4.76 | -3.50 | -18.33 | -12.00 |
| Rh_2_21 | 4.97 | -1.24 | 3.20 | -19.17 | -8.52 |

| | | | | | |
|---------|-------|--------|--------|--------|--------|
| Rh_2_22 | 2.05 | -1.86 | -5.29 | -16.03 | -3.60 |
| Rh_3_0 | -0.72 | -5.47 | -12.10 | -23.87 | -20.56 |
| Rh_3_1 | 3.51 | -3.47 | -11.48 | -23.30 | -15.61 |
| Rh_3_2 | 5.71 | -1.91 | -10.65 | -20.08 | -15.51 |
| Rh_3_3 | 5.98 | -0.44 | -4.18 | -17.89 | -14.76 |
| Rh_3_4 | 0.26 | -3.68 | -15.76 | -19.37 | -16.04 |
| Rh_3_5 | 5.69 | -1.99 | -11.79 | -19.24 | -16.70 |
| Rh_3_6 | 2.90 | 2.34 | -10.12 | -16.76 | -18.26 |
| Rh_3_8 | 0.93 | 2.28 | -10.80 | -16.68 | -13.24 |
| Rh_3_9 | 4.65 | -6.15 | -15.19 | -20.09 | -15.66 |
| Rh_3_10 | 3.08 | -1.30 | -11.16 | -22.86 | -14.57 |
| Rh_3_11 | -0.44 | -4.74 | -13.12 | -18.78 | -12.60 |
| Rh_3_12 | 3.32 | -3.06 | -9.42 | -16.07 | -8.84 |
| Rh_3_13 | 10.10 | 1.46 | 0.69 | -7.02 | 0.03 |
| Rh_3_14 | 1.62 | -4.90 | -13.71 | -23.13 | -10.90 |
| Rh_3_16 | 0.27 | -1.38 | -14.79 | -19.25 | -18.32 |
| Rh_3_17 | 1.25 | 0.85 | -12.68 | -16.38 | -13.00 |
| Rh_3_18 | 0.93 | -0.80 | -6.86 | -19.65 | -16.27 |
| Rh_3_19 | 0.53 | -1.08 | -10.48 | -21.91 | -11.14 |
| Rh_3_20 | 3.71 | 0.50 | -0.07 | -10.91 | -8.13 |
| Rh_3_21 | 9.56 | -7.83 | -4.51 | -15.51 | -8.67 |
| Rh_3_22 | 8.36 | 6.05 | 3.52 | -13.73 | -9.49 |
| Rh_4_0 | -3.86 | -5.93 | -16.65 | -24.49 | -21.06 |
| Rh_4_1 | 3.21 | -4.77 | -13.60 | -20.34 | -17.80 |
| Rh_4_2 | -2.43 | -3.86 | -12.27 | -27.56 | -21.11 |
| Rh_4_3 | 0.05 | -2.00 | -8.13 | -18.82 | -14.81 |
| Rh_4_4 | -2.06 | -5.78 | -12.73 | -20.18 | -15.29 |
| Rh_4_5 | 0.41 | -7.56 | -15.93 | -23.25 | -18.00 |
| Rh_4_6 | -1.61 | -1.61 | -15.47 | -22.82 | -15.37 |
| Rh_4_7 | 11.99 | -2.68 | -5.17 | -18.00 | -10.07 |
| Rh_4_8 | -4.36 | -7.02 | -14.02 | -21.92 | -19.90 |
| Rh_4_9 | -3.68 | -4.60 | -11.90 | -23.14 | -18.10 |
| Rh_4_10 | -2.13 | -7.18 | -14.39 | -21.37 | -19.20 |
| Rh_4_11 | -3.07 | -7.74 | -16.00 | -18.76 | -12.73 |
| Rh_4_12 | -3.96 | -7.51 | -16.47 | -24.14 | -18.78 |
| Rh_4_13 | 5.15 | -5.44 | 0.16 | -23.23 | -8.88 |
| Rh_4_14 | -1.51 | -3.18 | -15.55 | -21.34 | -16.97 |
| Rh_4_16 | -4.51 | -7.82 | -19.32 | -19.11 | -16.93 |
| Rh_4_17 | -7.26 | -9.07 | -18.84 | -22.82 | -16.45 |
| Rh_4_18 | -3.64 | -4.67 | -17.84 | -20.49 | -13.47 |
| Rh_4_19 | -2.49 | -6.61 | -19.34 | -18.72 | -12.98 |
| Rh_4_20 | -2.13 | 0.97 | -10.33 | -20.65 | -9.78 |
| Rh_4_21 | 0.88 | -6.17 | -10.61 | -16.54 | -16.50 |
| Rh_4_22 | 9.77 | 2.71 | 0.97 | -16.54 | -6.99 |
| Rh_5_0 | -2.93 | -6.28 | -18.20 | -25.05 | -22.17 |
| Rh_5_1 | 0.19 | -7.11 | -10.94 | -26.45 | -21.40 |
| Rh_5_2 | 4.04 | -4.08 | -8.48 | -21.07 | -17.42 |
| Rh_5_3 | 6.28 | -2.98 | -4.02 | -22.01 | -18.09 |
| Rh_5_4 | -2.02 | -4.52 | -16.41 | -22.79 | -13.36 |
| Rh_5_5 | 2.90 | -3.99 | -12.80 | -17.33 | -12.48 |
| Rh_5_6 | -8.79 | -12.32 | -14.93 | -30.15 | -19.62 |
| Rh_5_7 | 13.27 | 8.35 | 7.22 | -14.20 | -8.51 |
| Rh_5_8 | -2.35 | -5.36 | -15.68 | -22.15 | -19.28 |
| Rh_5_9 | -4.17 | -6.53 | -14.83 | -19.26 | -18.49 |
| Rh_5_10 | -6.01 | -7.51 | -19.79 | -22.89 | -20.87 |
| Rh_5_11 | -3.74 | -5.56 | -17.97 | -24.21 | -17.73 |
| Rh_5_12 | -2.31 | -3.00 | -16.93 | -21.99 | -15.06 |
| Rh_5_13 | 8.14 | -7.52 | -0.95 | -22.76 | -13.63 |
| Rh_5_14 | -0.03 | -3.52 | -12.07 | -20.87 | -16.31 |
| Rh_5_16 | -1.17 | -1.37 | -17.45 | -17.89 | -13.42 |

| | | | | | |
|---------|-------|--------|--------|--------|--------|
| Rh_5_17 | -5.34 | -8.28 | -13.78 | -17.86 | -15.52 |
| Rh_5_18 | -6.66 | -6.16 | -16.27 | -20.47 | -15.88 |
| Rh_5_19 | -3.69 | -4.88 | -18.35 | -22.77 | -12.81 |
| Rh_5_20 | -3.89 | -6.10 | -12.99 | -22.15 | -14.13 |
| Rh_5_21 | -0.83 | -4.11 | -14.08 | -24.08 | -17.94 |
| Rh_5_22 | 7.19 | -6.21 | -3.82 | -19.99 | -14.79 |
| Rh_6_0 | -3.27 | -5.69 | -15.44 | -23.32 | -18.71 |
| Rh_6_1 | 4.50 | -3.11 | -11.33 | -15.94 | -18.79 |
| Rh_6_2 | 7.17 | -5.80 | -7.61 | -21.80 | -19.76 |
| Rh_6_3 | 11.20 | 4.09 | -8.83 | -14.39 | -11.31 |
| Rh_6_4 | -1.60 | -6.37 | -12.76 | -20.89 | -13.73 |
| Rh_6_5 | -2.06 | -3.00 | -15.42 | -20.80 | -12.62 |
| Rh_6_6 | -0.44 | -2.78 | -11.10 | -16.34 | -12.40 |
| Rh_6_7 | 10.46 | 9.06 | 7.16 | -5.00 | -3.61 |
| Rh_6_8 | 4.78 | -6.81 | -16.27 | -20.46 | -15.18 |
| Rh_6_9 | 1.94 | -5.45 | -12.41 | -21.06 | -12.39 |
| Rh_6_10 | -1.35 | -8.93 | -15.68 | -23.16 | -20.22 |
| Rh_6_11 | 2.22 | -1.04 | -9.40 | -22.61 | -11.19 |
| Rh_6_12 | -2.36 | -8.81 | -22.29 | -21.20 | -21.72 |
| Rh_6_13 | 7.03 | -4.17 | -12.39 | -17.54 | -14.60 |
| Rh_6_14 | -3.13 | -1.16 | -18.74 | -19.56 | -19.20 |
| Rh_6_15 | 17.47 | 3.03 | -11.73 | -19.40 | -4.90 |
| Rh_6_16 | -0.68 | -8.12 | -20.46 | -25.07 | -15.80 |
| Rh_6_17 | -2.42 | -2.81 | -17.66 | -25.85 | -11.19 |
| Rh_6_18 | -7.37 | -6.34 | -22.68 | -28.48 | -21.13 |
| Rh_6_19 | -4.13 | -1.30 | -17.30 | -19.32 | -17.92 |
| Rh_6_20 | -1.85 | -3.34 | -19.49 | -17.47 | -15.69 |
| Rh_6_21 | 4.86 | -4.35 | -9.87 | -18.52 | -21.57 |
| Rh_6_22 | 0.44 | -3.57 | -6.88 | -23.98 | -15.30 |
| Rh_7_0 | 2.04 | -5.75 | -16.49 | -19.53 | -16.09 |
| Rh_7_1 | 6.47 | 0.46 | -2.45 | -19.88 | -11.29 |
| Rh_7_2 | 0.76 | -11.44 | -16.77 | -25.44 | -14.70 |
| Rh_7_3 | 23.41 | 10.49 | 10.21 | -12.88 | 2.50 |
| Rh_7_4 | -3.55 | -2.61 | -8.61 | -21.83 | -19.65 |
| Rh_7_5 | 4.35 | 2.72 | -4.92 | -22.48 | -15.24 |
| Rh_7_6 | 1.56 | -3.04 | -6.05 | -13.58 | -15.71 |
| Rh_7_8 | 15.99 | 0.45 | 1.03 | -12.84 | -7.19 |
| Rh_7_9 | 14.67 | 0.92 | -4.86 | -16.69 | -7.82 |
| Rh_7_10 | 3.42 | 1.96 | -4.91 | -17.17 | -12.08 |
| Rh_7_11 | 10.06 | -2.13 | -7.88 | -18.38 | -10.44 |
| Rh_7_12 | 7.08 | 5.78 | -4.91 | -14.03 | -12.16 |
| Rh_7_14 | 7.11 | -5.73 | -7.14 | -22.54 | -17.47 |
| Rh_7_16 | 9.10 | 2.51 | -8.71 | -21.14 | -7.88 |
| Rh_7_17 | 8.05 | 0.33 | -3.15 | -20.09 | -7.75 |
| Rh_7_18 | 6.17 | -0.35 | -7.76 | -20.03 | -6.29 |
| Rh_7_21 | 12.65 | 11.38 | -2.19 | -15.12 | -4.90 |
| Rh_7_22 | 11.31 | 4.19 | -4.89 | -16.97 | -10.69 |
| Rh_8_0 | -3.12 | -7.33 | -17.54 | -22.39 | -18.59 |
| Rh_8_1 | 0.91 | -7.97 | -18.61 | -22.53 | -16.30 |
| Rh_8_2 | 7.21 | -3.09 | -5.78 | -21.80 | -15.02 |
| Rh_8_3 | -1.96 | -8.57 | -21.62 | -24.01 | -12.38 |
| Rh_8_4 | -2.37 | -9.09 | -17.60 | -18.02 | -15.57 |
| Rh_8_5 | 2.68 | -3.84 | -9.93 | -20.27 | -12.57 |
| Rh_8_6 | -2.81 | 1.33 | -17.08 | -18.32 | -15.14 |
| Rh_8_7 | 20.65 | 10.01 | 10.82 | -21.04 | 11.19 |
| Rh_8_8 | -1.90 | -6.02 | -17.83 | -19.43 | -15.29 |
| Rh_8_9 | -2.02 | -6.22 | -11.11 | -23.59 | -16.33 |
| Rh_8_10 | -1.66 | -2.62 | -16.85 | -20.19 | -13.35 |
| Rh_8_11 | -4.09 | -5.02 | -16.80 | -22.79 | -14.30 |
| Rh_8_12 | -1.64 | -3.08 | -18.35 | -21.34 | -15.98 |

| | | | | | |
|----------|-------|-------|--------|--------|--------|
| Rh_8_13 | 5.34 | -0.27 | -6.17 | -15.71 | -2.53 |
| Rh_8_14 | -4.29 | -3.69 | -19.33 | -22.43 | -17.26 |
| Rh_8_15 | 10.79 | 4.01 | -4.43 | -14.56 | -0.67 |
| Rh_8_16 | -4.65 | -7.67 | -14.06 | -25.69 | -18.02 |
| Rh_8_17 | -4.69 | -3.69 | -19.65 | -17.10 | -12.68 |
| Rh_8_18 | -4.13 | -8.98 | -17.75 | -23.17 | -13.49 |
| Rh_8_19 | -4.18 | -8.30 | -16.39 | -23.22 | -13.92 |
| Rh_8_20 | 0.57 | -6.97 | -17.88 | -21.84 | -14.23 |
| Rh_8_21 | 2.68 | -6.98 | -13.80 | -26.70 | -11.88 |
| Rh_8_22 | 0.85 | -7.10 | -14.18 | -24.93 | -15.22 |
| Rh_9_0 | -4.28 | -8.78 | -16.24 | -24.78 | -18.18 |
| Rh_9_1 | 2.23 | -5.59 | -14.62 | -20.54 | -16.11 |
| Rh_9_2 | 4.91 | -0.99 | -7.01 | -17.98 | -13.29 |
| Rh_9_3 | 5.41 | -0.35 | -5.36 | -17.84 | -13.68 |
| Rh_9_4 | -2.90 | -5.25 | -16.26 | -23.41 | -17.08 |
| Rh_9_5 | -2.18 | -5.28 | -14.48 | -18.75 | -16.67 |
| Rh_9_6 | 10.35 | 0.96 | -17.63 | -21.09 | -15.72 |
| Rh_9_8 | -3.54 | -3.96 | -18.77 | -22.27 | -15.38 |
| Rh_9_9 | -2.47 | -3.07 | -14.81 | -22.46 | -16.01 |
| Rh_9_10 | -5.53 | -5.26 | -13.58 | -22.39 | -18.44 |
| Rh_9_11 | -5.07 | -4.75 | -19.73 | -21.29 | -16.14 |
| Rh_9_12 | -2.66 | -4.12 | -17.32 | -21.02 | -15.65 |
| Rh_9_13 | 0.10 | -4.46 | -11.46 | -14.10 | -10.00 |
| Rh_9_14 | -3.88 | -2.66 | -18.95 | -21.13 | -16.90 |
| Rh_9_15 | 5.66 | -5.45 | -13.46 | -21.25 | -6.15 |
| Rh_9_16 | -0.58 | -6.77 | -14.40 | -17.46 | -14.01 |
| Rh_9_17 | -6.62 | -7.16 | -18.78 | -24.22 | -14.02 |
| Rh_9_18 | -4.15 | -3.17 | -12.71 | -19.51 | -15.59 |
| Rh_9_19 | -4.33 | -6.59 | -11.23 | -26.36 | -16.06 |
| Rh_9_20 | -0.52 | -1.33 | -13.42 | -20.46 | -13.82 |
| Rh_9_21 | -1.56 | -5.56 | -7.86 | -19.28 | -17.57 |
| Rh_9_22 | 4.70 | -6.53 | -5.64 | -24.91 | -14.89 |
| Rh_10_0 | -3.07 | -5.62 | -16.16 | -21.82 | -16.13 |
| Rh_10_1 | 0.46 | -6.84 | -16.95 | -23.83 | -17.78 |
| Rh_10_2 | 2.12 | -2.40 | -7.89 | -22.59 | -12.81 |
| Rh_10_3 | 9.08 | 4.84 | 0.64 | -11.42 | 0.05 |
| Rh_10_4 | -2.96 | -2.43 | -18.22 | -22.84 | -14.49 |
| Rh_10_5 | -2.45 | -7.83 | -13.95 | -15.18 | -15.37 |
| Rh_10_6 | -0.70 | -6.53 | -13.96 | -16.22 | -16.25 |
| Rh_10_8 | -1.93 | -3.72 | -16.59 | -21.44 | -15.94 |
| Rh_10_9 | -2.90 | -3.60 | -16.83 | -19.13 | -13.68 |
| Rh_10_10 | -2.75 | -6.39 | -17.66 | -21.02 | -16.72 |
| Rh_10_11 | -3.65 | -4.45 | -18.01 | -21.28 | -16.78 |
| Rh_10_12 | -2.18 | -5.48 | -17.51 | -20.76 | -15.24 |
| Rh_10_13 | 2.34 | 4.60 | -5.16 | -18.23 | -4.25 |
| Rh_10_14 | -4.13 | -1.71 | -19.25 | -21.33 | -13.81 |
| Rh_10_15 | 11.89 | 1.92 | -2.44 | -15.95 | 4.23 |
| Rh_10_16 | -2.28 | -4.66 | -7.86 | -18.57 | -13.62 |
| Rh_10_17 | -7.12 | -9.09 | -16.76 | -27.76 | -19.44 |
| Rh_10_18 | -8.12 | -9.65 | -16.62 | -23.81 | -20.26 |
| Rh_10_19 | -6.01 | -7.84 | -18.12 | -24.30 | -16.96 |
| Rh_10_20 | 0.36 | -3.95 | -12.40 | -19.40 | -15.05 |
| Rh_10_21 | -0.63 | 0.55 | -9.21 | -17.75 | -16.93 |
| Rh_10_22 | 6.58 | -6.50 | -6.26 | -22.83 | -14.04 |
| Rh_11_0 | -4.09 | -5.63 | -18.74 | -22.85 | -17.97 |
| Rh_11_1 | 1.13 | -6.07 | -13.83 | -21.25 | -17.09 |
| Rh_11_2 | 3.12 | 0.51 | -3.98 | -19.85 | -11.57 |
| Rh_11_3 | 2.41 | -6.49 | -9.83 | -18.81 | -14.06 |
| Rh_11_4 | -4.79 | -8.66 | -20.70 | -22.89 | -17.76 |
| Rh_11_5 | -2.36 | -3.58 | -12.94 | -24.29 | -16.08 |

| | | | | | |
|----------|-------|--------|--------|--------|--------|
| Rh_11_6 | -5.90 | -5.87 | -17.34 | -25.03 | -18.58 |
| Rh_11_7 | 13.85 | -7.48 | 8.89 | -23.72 | -7.39 |
| Rh_11_8 | -2.29 | -3.46 | -18.21 | -18.04 | -15.80 |
| Rh_11_9 | -4.32 | -3.39 | -18.01 | -24.42 | -14.42 |
| Rh_11_10 | -4.08 | -3.63 | -12.89 | -22.30 | -14.05 |
| Rh_11_11 | -4.90 | -6.87 | -19.37 | -23.03 | -15.88 |
| Rh_11_12 | -2.31 | -0.92 | -14.00 | -21.65 | -15.00 |
| Rh_11_13 | 5.85 | 0.06 | -6.49 | -12.94 | -2.75 |
| Rh_11_14 | -4.78 | -5.55 | -18.26 | -21.66 | -13.47 |
| Rh_11_15 | 10.42 | -0.13 | -7.15 | 0.51 | -5.45 |
| Rh_11_16 | -5.77 | -9.47 | -17.24 | -24.68 | -17.42 |
| Rh_11_17 | -6.22 | -8.43 | -16.85 | -26.14 | -12.27 |
| Rh_11_18 | -3.27 | 1.10 | -12.01 | -24.22 | -15.38 |
| Rh_11_19 | -3.34 | -5.14 | -12.81 | -21.93 | -11.34 |
| Rh_11_20 | -3.60 | -5.64 | -14.88 | -17.91 | -15.82 |
| Rh_11_21 | -0.45 | -0.40 | -7.04 | -18.13 | -14.64 |
| Rh_11_22 | 8.65 | -4.00 | -11.74 | -21.56 | -11.54 |
| Rh_12_0 | -3.08 | -6.94 | -16.75 | -22.82 | -19.41 |
| Rh_12_1 | -1.71 | -4.50 | -13.00 | -24.34 | -15.86 |
| Rh_12_2 | 4.15 | -0.85 | -7.84 | -13.80 | -10.79 |
| Rh_12_3 | 7.52 | -2.93 | -12.01 | -18.58 | -12.72 |
| Rh_12_4 | -3.77 | -3.61 | -19.46 | -24.50 | -15.36 |
| Rh_12_5 | -0.32 | -4.28 | -10.05 | -21.97 | -15.42 |
| Rh_12_6 | -0.88 | -6.95 | -14.91 | -25.14 | -17.16 |
| Rh_12_7 | 19.77 | 14.31 | 9.95 | -14.86 | 2.85 |
| Rh_12_8 | -3.89 | -5.11 | -19.11 | -22.63 | -17.12 |
| Rh_12_9 | -2.75 | -6.60 | -17.80 | -22.91 | -16.44 |
| Rh_12_10 | -3.10 | -4.28 | -13.58 | -21.86 | -14.72 |
| Rh_12_11 | -5.50 | -4.52 | -13.62 | -22.33 | -17.25 |
| Rh_12_12 | -4.29 | -3.10 | -19.59 | -22.17 | -17.43 |
| Rh_12_13 | 2.20 | -9.13 | -2.14 | -22.02 | -9.45 |
| Rh_12_14 | 0.43 | -5.48 | -18.30 | -18.84 | -12.92 |
| Rh_12_15 | 12.09 | 0.40 | -1.55 | -22.10 | -8.41 |
| Rh_12_16 | -3.77 | -5.51 | -14.82 | -23.11 | -14.40 |
| Rh_12_17 | -2.99 | -2.63 | -11.05 | -16.83 | -16.22 |
| Rh_12_18 | -2.65 | -5.78 | -13.40 | -19.53 | -19.70 |
| Rh_12_19 | -7.54 | -8.13 | -22.09 | -24.62 | -18.78 |
| Rh_12_20 | -0.06 | -5.57 | -14.16 | -23.04 | -13.01 |
| Rh_12_21 | -4.00 | -11.11 | -16.00 | -24.21 | -15.71 |
| Rh_12_22 | 6.98 | -3.37 | -14.00 | -25.53 | -13.15 |
| Rh_13_0 | 3.33 | -8.09 | -12.16 | -25.53 | -16.52 |
| Rh_13_1 | -2.22 | -4.32 | -6.47 | -28.42 | -9.18 |
| Rh_13_2 | 11.64 | -0.15 | -9.88 | -22.22 | -10.16 |
| Rh_13_4 | -5.73 | -8.39 | -17.14 | -23.05 | -15.81 |
| Rh_13_5 | -4.04 | -11.50 | -6.81 | -25.05 | -10.67 |
| Rh_13_6 | 4.37 | -1.25 | 2.61 | -14.00 | -2.41 |
| Rh_13_8 | -4.03 | -11.06 | -19.89 | -27.87 | -16.86 |
| Rh_13_9 | 0.54 | -4.31 | -13.40 | -19.77 | -12.63 |
| Rh_13_10 | 3.57 | -1.42 | -7.76 | -14.59 | -8.00 |
| Rh_13_11 | -0.57 | -6.88 | -15.58 | -19.38 | -12.17 |
| Rh_13_12 | 2.60 | -6.17 | -15.83 | -23.24 | -11.75 |
| Rh_13_13 | 6.27 | -6.42 | -4.23 | -11.68 | -3.61 |
| Rh_13_14 | 3.54 | -0.07 | -12.78 | -21.23 | -12.57 |
| Rh_13_16 | 1.04 | -0.81 | -11.26 | -24.24 | -12.85 |
| Rh_13_17 | -3.45 | -6.27 | -8.50 | -24.47 | -10.61 |
| Rh_13_18 | -0.62 | -4.63 | -13.51 | -18.52 | -12.97 |
| Rh_13_19 | -1.48 | -1.83 | -10.81 | -18.91 | -10.54 |
| Rh_13_20 | 3.79 | -2.79 | -9.13 | -17.86 | -9.68 |
| Rh_13_21 | 1.45 | -6.32 | -10.23 | -25.30 | -14.69 |
| Rh_13_22 | 8.48 | -3.17 | -3.40 | -15.58 | -8.72 |

| | | | | | |
|----------|-------|--------|--------|--------|--------|
| Rh_14_0 | -3.84 | -7.57 | -17.76 | -24.20 | -18.31 |
| Rh_14_1 | -1.02 | -3.83 | -8.95 | -21.46 | -16.33 |
| Rh_14_2 | -1.13 | -0.46 | -12.61 | -22.83 | -9.48 |
| Rh_14_3 | 1.94 | -3.26 | -4.19 | -19.23 | -8.68 |
| Rh_14_4 | -0.66 | -2.58 | -13.64 | -22.85 | -14.09 |
| Rh_14_5 | 0.87 | -0.83 | -10.18 | -19.87 | -14.12 |
| Rh_14_6 | -1.02 | -5.74 | -12.95 | -19.23 | -15.81 |
| Rh_14_7 | 13.20 | 7.72 | 1.33 | -18.98 | -5.54 |
| Rh_14_8 | -2.00 | -4.06 | -18.74 | -21.40 | -13.08 |
| Rh_14_9 | -1.91 | -3.83 | -15.74 | -21.33 | -16.72 |
| Rh_14_10 | -2.39 | -3.28 | -20.18 | -21.99 | -12.10 |
| Rh_14_11 | -4.34 | -4.97 | -19.48 | -19.15 | -13.93 |
| Rh_14_12 | -2.15 | -2.97 | -18.44 | -18.31 | -13.73 |
| Rh_14_13 | 11.44 | -3.66 | -5.21 | -12.70 | -10.20 |
| Rh_14_14 | -2.69 | 1.11 | -14.12 | -19.83 | -15.24 |
| Rh_14_15 | 8.57 | -6.19 | -5.48 | -21.56 | -10.37 |
| Rh_14_16 | -2.13 | -6.22 | -11.60 | -22.46 | -14.99 |
| Rh_14_17 | -5.88 | -3.43 | -17.38 | -23.42 | -13.54 |
| Rh_14_18 | -3.21 | -6.23 | -14.90 | -23.32 | -16.25 |
| Rh_14_19 | -5.39 | -4.57 | -14.96 | -23.90 | -16.13 |
| Rh_14_20 | 0.12 | -1.90 | -13.28 | -18.75 | -15.41 |
| Rh_14_21 | 0.42 | 0.54 | -11.42 | -20.53 | -11.71 |
| Rh_14_22 | 2.02 | -6.77 | -8.47 | -22.69 | -12.41 |
| Rh_15_0 | -5.61 | -9.84 | -18.73 | -28.24 | -15.96 |
| Rh_15_1 | 0.04 | -6.57 | -10.10 | -27.11 | -18.52 |
| Rh_15_2 | -3.65 | -1.24 | -9.74 | -27.49 | -20.07 |
| Rh_15_4 | -6.89 | -14.42 | -22.69 | -26.61 | -24.18 |
| Rh_15_5 | 2.76 | -0.73 | -7.30 | -17.71 | -4.07 |
| Rh_15_6 | 4.03 | -4.84 | -8.73 | -14.70 | -5.20 |
| Rh_15_8 | -2.62 | -5.81 | -16.52 | -17.64 | -16.34 |
| Rh_15_9 | 3.95 | 0.76 | -10.70 | -24.84 | -13.29 |
| Rh_15_10 | -1.25 | -3.93 | -10.44 | -18.07 | -13.41 |
| Rh_15_11 | 2.61 | -5.24 | -11.09 | -22.10 | -10.96 |
| Rh_15_12 | -0.27 | -2.60 | -4.08 | -11.40 | -12.25 |
| Rh_15_13 | 11.30 | -14.56 | -6.14 | -23.47 | -11.27 |
| Rh_15_14 | -1.89 | -0.56 | -6.95 | -27.08 | -15.46 |
| Rh_15_16 | -5.59 | -2.80 | -4.19 | -26.41 | -18.97 |
| Rh_15_17 | 1.68 | -3.95 | -4.74 | -15.45 | -12.03 |
| Rh_15_18 | -7.57 | -13.12 | -20.48 | -24.18 | -18.66 |
| Rh_15_19 | -2.10 | -1.87 | -9.37 | -7.83 | -11.40 |
| Rh_15_20 | 6.10 | -0.80 | -13.18 | -19.04 | -14.30 |
| Rh_15_21 | -1.41 | -12.36 | -7.53 | -24.67 | -7.61 |
| Rh_15_22 | 15.95 | -1.36 | -5.37 | -15.67 | -12.05 |
| Rh_16_0 | -1.24 | -6.26 | -11.13 | -16.30 | -16.84 |
| Rh_16_1 | 2.37 | -0.70 | -7.65 | -23.89 | -16.92 |
| Rh_16_2 | 5.80 | 0.61 | -4.91 | -20.34 | -14.45 |
| Rh_16_3 | 4.25 | 1.26 | -4.05 | -17.25 | -9.86 |
| Rh_16_4 | 2.58 | -3.50 | -11.78 | -17.51 | -12.86 |
| Rh_16_5 | -2.64 | -7.11 | -19.08 | -24.69 | -16.52 |
| Rh_16_6 | 2.62 | -3.17 | -4.11 | -15.08 | -10.06 |
| Rh_16_7 | 19.80 | 2.04 | 7.41 | -18.74 | -5.93 |
| Rh_16_8 | -3.84 | 0.23 | -17.08 | -17.85 | -14.37 |
| Rh_16_9 | -0.23 | -3.39 | -9.56 | -17.30 | -13.33 |
| Rh_16_10 | -3.91 | -8.09 | -13.70 | -18.16 | -16.78 |
| Rh_16_11 | -1.99 | -5.90 | -14.21 | -22.40 | -13.55 |
| Rh_16_12 | -1.81 | 0.23 | -14.87 | -21.03 | -16.69 |
| Rh_16_13 | 6.50 | -4.97 | -6.24 | -12.19 | -9.18 |
| Rh_16_14 | -6.30 | -8.54 | -17.38 | -22.85 | -20.52 |
| Rh_16_16 | -7.18 | -6.64 | -17.97 | -20.72 | -13.66 |
| Rh_16_17 | -2.76 | -5.15 | -19.71 | -20.39 | -14.34 |

| | | | | | |
|----------|-------|--------|--------|--------|--------|
| Rh_16_18 | -5.23 | -4.75 | -9.49 | -19.50 | -13.13 |
| Rh_16_19 | -7.12 | -9.00 | -18.15 | -22.63 | -16.01 |
| Rh_16_20 | -1.96 | -4.44 | -13.15 | -16.15 | -14.75 |
| Rh_16_21 | 7.02 | -6.26 | -3.73 | -11.51 | -5.45 |
| Rh_16_22 | 5.84 | -5.46 | -10.69 | -13.68 | -7.60 |
| Rh_17_0 | -1.71 | -6.65 | -17.85 | -22.58 | -16.77 |
| Rh_17_1 | 0.05 | -5.17 | -12.34 | -15.99 | -17.08 |
| Rh_17_2 | 4.33 | -4.95 | -9.21 | -20.10 | -12.10 |
| Rh_17_3 | 0.96 | -4.55 | -4.84 | -22.13 | -15.59 |
| Rh_17_4 | 0.49 | -4.61 | -13.51 | -18.64 | -13.35 |
| Rh_17_5 | 0.21 | -7.00 | -10.93 | -21.26 | -11.93 |
| Rh_17_6 | 4.45 | -8.34 | -11.81 | -22.37 | -11.31 |
| Rh_17_7 | 19.36 | 6.28 | 5.88 | -0.56 | -3.48 |
| Rh_17_8 | -1.10 | -5.26 | -18.96 | -16.95 | -17.25 |
| Rh_17_9 | -5.86 | -11.57 | -15.85 | -23.54 | -20.21 |
| Rh_17_10 | -2.62 | -4.10 | -16.96 | -19.60 | -14.21 |
| Rh_17_11 | -3.81 | -1.84 | -16.74 | -19.71 | -14.61 |
| Rh_17_12 | -2.61 | -0.83 | -15.65 | -21.24 | -15.92 |
| Rh_17_13 | 7.24 | -2.93 | -5.34 | -18.10 | -4.64 |
| Rh_17_14 | -5.89 | -4.93 | -17.15 | -19.25 | -14.39 |
| Rh_17_15 | 5.41 | -3.83 | -8.76 | -24.00 | -6.95 |
| Rh_17_16 | -4.51 | -4.52 | -15.40 | -21.78 | -12.04 |
| Rh_17_17 | -8.09 | -7.69 | -20.47 | -22.68 | -12.77 |
| Rh_17_18 | -5.44 | -4.66 | -20.06 | -23.60 | -13.36 |
| Rh_17_19 | -6.30 | -4.63 | -18.22 | -21.35 | -13.80 |
| Rh_17_20 | -2.83 | -2.65 | -10.88 | -16.30 | -11.23 |
| Rh_17_21 | 7.85 | 0.41 | -6.83 | -23.80 | -13.64 |
| Rh_17_22 | 4.72 | -4.73 | 2.93 | -13.09 | -12.47 |
| Rh_18_0 | -0.26 | -3.98 | -11.59 | -23.13 | -16.76 |
| Rh_18_1 | 2.04 | -3.97 | -7.64 | -14.46 | -15.72 |
| Rh_18_2 | 9.98 | -3.13 | -5.35 | -20.80 | -13.49 |
| Rh_18_3 | 8.75 | 2.27 | 3.31 | -13.28 | -9.95 |
| Rh_18_4 | -0.85 | -3.01 | -11.20 | -15.70 | -11.42 |
| Rh_18_5 | 1.84 | -5.46 | -8.71 | -19.40 | -13.66 |
| Rh_18_6 | 0.46 | -4.32 | -12.13 | -20.27 | -11.59 |
| Rh_18_7 | 16.02 | 11.62 | 0.62 | -12.18 | -4.07 |
| Rh_18_8 | -1.38 | -7.49 | -18.29 | -19.96 | -18.45 |
| Rh_18_9 | -2.59 | -3.77 | -11.86 | -18.62 | -19.68 |
| Rh_18_10 | -5.20 | -2.42 | -19.34 | -22.57 | -18.80 |
| Rh_18_11 | -3.31 | -2.20 | -17.91 | -22.12 | -16.25 |
| Rh_18_12 | -0.19 | -6.35 | -19.33 | -20.59 | -15.66 |
| Rh_18_13 | 2.97 | 0.98 | 2.59 | -14.04 | -12.09 |
| Rh_18_14 | -6.80 | -7.13 | -13.91 | -17.58 | -19.50 |
| Rh_18_15 | 1.84 | -11.99 | -14.89 | -26.10 | -9.58 |
| Rh_18_16 | -5.63 | -4.58 | -17.75 | -23.85 | -15.29 |
| Rh_18_17 | -4.47 | -8.89 | -19.59 | -23.02 | -12.64 |
| Rh_18_18 | -6.96 | -4.98 | -17.55 | -22.02 | -14.95 |
| Rh_18_19 | -6.33 | -5.46 | -11.68 | -23.32 | -14.88 |
| Rh_18_20 | -1.60 | 3.29 | -11.88 | -19.69 | -11.46 |
| Rh_18_21 | -0.25 | -3.84 | -7.77 | -24.38 | -12.09 |
| Rh_18_22 | 5.89 | 0.20 | -2.61 | -17.68 | -6.72 |
| Rh_19_0 | -5.75 | -11.33 | -22.04 | -24.50 | -21.70 |
| Rh_19_1 | 2.73 | -6.14 | -8.26 | -13.42 | -14.44 |
| Rh_19_2 | 7.91 | -2.14 | -8.14 | -22.29 | -14.49 |
| Rh_19_3 | 4.52 | -4.26 | -5.36 | -18.67 | -9.85 |
| Rh_19_4 | 2.44 | -3.59 | -13.70 | -15.65 | -11.21 |
| Rh_19_5 | 3.66 | -2.52 | -7.61 | -19.02 | -13.05 |
| Rh_19_6 | 6.42 | -4.60 | -14.08 | -20.49 | -11.98 |
| Rh_19_8 | -3.21 | -4.91 | -18.07 | -17.54 | -15.60 |
| Rh_19_9 | -2.37 | -0.30 | -15.30 | -17.66 | -15.86 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Rh_19_10 | -2.55 | -5.81 | -10.24 | -25.28 | -16.47 |
| Rh_19_11 | -3.29 | -6.24 | -15.90 | -22.24 | -15.46 |
| Rh_19_12 | -0.01 | -2.66 | -15.35 | -17.26 | -10.95 |
| Rh_19_13 | -1.38 | -7.41 | -12.65 | -21.42 | -19.02 |
| Rh_19_14 | -3.91 | -5.64 | -16.96 | -25.84 | -19.24 |
| Rh_19_15 | 0.19 | -5.36 | -13.99 | -23.24 | -18.17 |
| Rh_19_16 | -4.89 | -6.50 | -18.01 | -22.69 | -15.60 |
| Rh_19_17 | -4.39 | -7.39 | -21.85 | -23.23 | -13.44 |
| Rh_19_18 | -3.36 | -5.30 | -15.39 | -22.62 | -13.58 |
| Rh_19_19 | -10.48 | -10.75 | -17.65 | -25.81 | -11.42 |
| Rh_19_20 | -0.50 | -7.18 | -19.12 | -20.16 | -15.90 |
| Rh_19_21 | -2.95 | -9.86 | -14.80 | -25.73 | -17.77 |
| Rh_19_22 | 7.20 | -2.68 | 7.60 | -19.46 | -0.27 |
| Rh_20_0 | -1.51 | -7.16 | -13.51 | -21.48 | -17.54 |
| Rh_20_1 | 0.26 | -4.43 | -13.13 | -21.07 | -15.27 |
| Rh_20_2 | 8.53 | -5.58 | -8.77 | -18.93 | -3.14 |
| Rh_20_3 | 4.36 | -1.77 | 2.64 | -16.34 | -10.88 |
| Rh_20_4 | -0.19 | -2.51 | -17.95 | -21.35 | -15.63 |
| Rh_20_5 | 1.45 | -5.86 | -13.05 | -19.88 | -8.16 |
| Rh_20_6 | 0.45 | -3.50 | -5.25 | -16.34 | -12.91 |
| Rh_20_7 | 10.54 | -0.33 | 4.14 | -10.03 | -5.45 |
| Rh_20_8 | -0.64 | -3.16 | -18.00 | -22.34 | -15.02 |
| Rh_20_9 | -0.51 | -3.98 | -14.13 | -21.78 | -15.67 |
| Rh_20_10 | -2.70 | -2.14 | -18.57 | -20.30 | -21.14 |
| Rh_20_11 | -3.02 | -3.90 | -9.51 | -21.70 | -16.87 |
| Rh_20_12 | -4.63 | -5.52 | -12.62 | -23.68 | -15.78 |
| Rh_20_13 | 0.03 | -5.25 | -11.03 | -19.90 | -10.22 |
| Rh_20_14 | -1.95 | -7.84 | -17.51 | -14.13 | -22.31 |
| Rh_20_15 | 7.28 | 4.95 | 2.42 | -9.88 | -9.80 |
| Rh_20_16 | -3.91 | -5.22 | -13.87 | -21.40 | -14.21 |
| Rh_20_17 | -3.60 | -5.63 | -15.62 | -21.13 | -11.92 |
| Rh_20_18 | -2.67 | -7.97 | -17.25 | -23.24 | -9.99 |
| Rh_20_19 | -5.39 | -7.62 | -16.60 | -18.67 | -14.41 |
| Rh_20_20 | 1.11 | -5.41 | -13.68 | -15.40 | -11.95 |
| Rh_20_21 | 1.64 | -4.99 | -7.52 | -23.67 | -14.27 |
| Rh_21_0 | -2.02 | -5.84 | -11.41 | -23.72 | -19.42 |
| Rh_21_1 | 0.72 | -4.18 | -6.79 | -17.16 | -17.11 |
| Rh_21_2 | 7.04 | -6.78 | -11.96 | -18.08 | -14.52 |
| Rh_21_3 | 8.22 | -4.57 | -5.59 | -22.11 | -13.99 |
| Rh_21_4 | 1.86 | -7.18 | -8.35 | -19.23 | -15.51 |
| Rh_21_5 | 0.06 | -4.84 | -11.00 | -19.64 | -16.12 |
| Rh_21_6 | 0.70 | 1.35 | -13.60 | -12.54 | -19.53 |
| Rh_21_8 | -2.00 | -3.59 | -16.58 | -20.73 | -17.64 |
| Rh_21_9 | -3.17 | -8.07 | -16.39 | -26.08 | -18.03 |
| Rh_21_10 | 1.79 | -2.51 | -18.55 | -26.28 | -16.26 |
| Rh_21_11 | -2.46 | -3.59 | -11.94 | -22.31 | -14.26 |
| Rh_21_12 | 0.50 | -6.54 | -14.09 | -25.17 | -15.97 |
| Rh_21_13 | 4.58 | -2.31 | -3.53 | -16.61 | -4.50 |
| Rh_21_14 | -2.08 | -8.58 | -18.48 | -25.13 | -21.23 |
| Rh_21_15 | 13.84 | 4.58 | -3.61 | -28.40 | 1.24 |
| Rh_21_16 | -5.91 | -6.62 | -19.35 | -24.20 | -16.40 |
| Rh_21_17 | -3.86 | -6.33 | -15.97 | -25.20 | -14.00 |
| Rh_21_18 | -1.02 | -2.88 | -11.62 | -23.27 | -8.75 |
| Rh_21_19 | -2.53 | 3.76 | -5.43 | -17.37 | -14.82 |
| Rh_21_20 | -1.93 | -4.27 | -11.33 | -20.76 | -13.76 |
| Rh_21_21 | 8.80 | -3.91 | -6.12 | -20.87 | -16.49 |
| Rh_21_22 | 8.36 | 0.09 | 2.04 | -18.58 | -10.41 |
| Rh_22_0 | 1.31 | -7.52 | -16.89 | -23.95 | -18.87 |
| Rh_22_1 | 4.05 | -2.08 | -1.25 | -22.08 | -14.76 |
| Rh_22_2 | 13.92 | 0.72 | 2.22 | -20.23 | -10.38 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Rh_22_3 | 7.85 | 0.28 | -2.27 | -16.98 | -10.51 |
| Rh_22_4 | 1.88 | -5.29 | -12.92 | -20.81 | -18.39 |
| Rh_22_5 | 2.90 | -2.56 | -12.14 | -17.95 | -17.96 |
| Rh_22_6 | -0.41 | -3.61 | -11.37 | -18.87 | -16.14 |
| Rh_22_8 | -0.77 | -2.77 | -12.73 | -24.48 | -18.02 |
| Rh_22_9 | -1.77 | -6.46 | -15.08 | -24.37 | -14.14 |
| Rh_22_10 | 0.42 | -5.30 | -12.86 | -17.99 | -13.60 |
| Rh_22_11 | 2.84 | -5.07 | -11.75 | -22.83 | -12.22 |
| Rh_22_12 | 0.98 | -1.09 | -13.14 | -27.30 | -15.13 |
| Rh_22_13 | 3.54 | -5.75 | 0.97 | -18.45 | -2.04 |
| Rh_22_14 | -1.53 | -5.26 | -11.47 | -28.38 | -15.75 |
| Rh_22_16 | -1.37 | -8.64 | -18.21 | -27.10 | -13.55 |
| Rh_22_17 | -2.33 | -3.80 | -13.43 | -18.78 | -14.36 |
| Rh_22_18 | 1.48 | -3.70 | -4.28 | -21.27 | -13.85 |
| Rh_22_19 | -5.77 | -2.43 | -17.95 | -20.95 | -15.55 |
| Rh_22_20 | -0.17 | 0.63 | -9.41 | -20.75 | -12.54 |
| Rh_22_21 | 8.67 | -6.80 | -11.97 | -24.03 | -13.89 |
| Rh_22_22 | 6.29 | -6.51 | -3.90 | -17.30 | -10.69 |
| Ir_0_0 | -8.23 | -6.98 | -21.82 | -23.28 | -35.09 |
| Ir_0_1 | -6.15 | -6.16 | -20.65 | -22.45 | -30.65 |
| Ir_0_2 | -7.90 | -6.81 | -19.48 | -25.02 | -33.33 |
| Ir_0_3 | -1.42 | -5.89 | -9.81 | -18.50 | -27.07 |
| Ir_0_4 | -8.12 | -6.90 | -23.95 | -20.49 | -32.24 |
| Ir_0_5 | -7.56 | -6.12 | -17.09 | -19.13 | -31.42 |
| Ir_0_6 | -3.10 | -5.19 | -25.08 | -21.24 | -35.44 |
| Ir_0_7 | 2.00 | -5.02 | -11.56 | -16.40 | -27.93 |
| Ir_0_8 | -8.74 | -6.94 | -20.44 | -21.36 | -30.43 |
| Ir_0_9 | -11.64 | -10.09 | -24.74 | -26.12 | -34.17 |
| Ir_0_10 | -9.43 | -7.13 | -21.17 | -21.73 | -31.16 |
| Ir_0_11 | -11.20 | -9.20 | -27.32 | -23.82 | -34.65 |
| Ir_0_12 | -8.49 | -7.66 | -19.43 | -20.61 | -30.52 |
| Ir_0_13 | -4.05 | -7.46 | -14.98 | -19.63 | -23.69 |
| Ir_0_14 | -7.90 | -6.10 | -24.26 | -22.48 | -31.85 |
| Ir_0_15 | -1.60 | -9.27 | -13.24 | -24.38 | -30.72 |
| Ir_0_16 | -8.20 | -5.68 | -19.52 | -24.99 | -31.50 |
| Ir_0_17 | -8.64 | -2.35 | -21.28 | -20.93 | -22.99 |
| Ir_0_18 | -6.30 | -1.84 | -16.61 | -18.47 | -28.67 |
| Ir_0_19 | -7.27 | -5.40 | -22.39 | -23.33 | -29.14 |
| Ir_0_20 | -8.80 | -4.49 | -13.87 | -20.42 | -27.73 |
| Ir_0_21 | -1.56 | -8.56 | -18.39 | -24.15 | -28.61 |
| Ir_0_22 | 3.27 | -3.99 | -12.08 | -19.03 | -29.18 |
| Ir_1_0 | -7.16 | -6.03 | -21.89 | -23.96 | -34.07 |
| Ir_1_1 | -1.16 | -5.23 | -18.86 | -21.65 | -31.86 |
| Ir_1_2 | -4.08 | -2.53 | -15.24 | -19.32 | -30.82 |
| Ir_1_3 | 0.01 | -4.64 | -13.51 | -18.85 | -25.42 |
| Ir_1_4 | -8.25 | -7.23 | -23.82 | -22.46 | -32.19 |
| Ir_1_5 | -5.87 | -2.32 | -15.28 | -18.62 | -32.10 |
| Ir_1_6 | 1.49 | 1.44 | -15.68 | -15.20 | -31.17 |
| Ir_1_7 | 13.36 | 7.82 | 3.44 | -4.84 | -22.41 |
| Ir_1_8 | -8.32 | -8.22 | -19.85 | -22.99 | -29.93 |
| Ir_1_9 | -9.85 | -6.96 | -18.17 | -21.42 | -28.77 |
| Ir_1_10 | -7.94 | -7.84 | -21.63 | -22.55 | -29.75 |
| Ir_1_11 | -6.32 | -6.25 | -21.73 | -18.98 | -32.90 |
| Ir_1_12 | -7.68 | -5.86 | -20.56 | -22.62 | -31.89 |
| Ir_1_13 | 6.65 | -2.82 | -8.89 | -19.64 | -10.47 |
| Ir_1_14 | -7.34 | -5.98 | -20.11 | -21.16 | -27.93 |
| Ir_1_16 | -8.60 | -9.14 | -17.63 | -27.05 | -31.05 |
| Ir_1_17 | -4.45 | -6.43 | -15.72 | -17.71 | -22.89 |
| Ir_1_18 | -2.43 | -2.10 | -15.34 | -10.40 | -24.63 |
| Ir_1_19 | -9.50 | -8.14 | -20.44 | -18.09 | -29.97 |

| | | | | | |
|---------|--------|-------|--------|--------|--------|
| Ir_1_20 | -4.06 | -6.97 | -15.19 | -22.59 | -23.89 |
| Ir_1_21 | -3.25 | -3.46 | -15.50 | -20.91 | -26.34 |
| Ir_1_22 | 4.75 | -4.41 | -12.71 | -14.67 | -23.68 |
| Ir_2_0 | -5.86 | -7.23 | -17.86 | -20.97 | -33.45 |
| Ir_2_1 | 0.28 | -6.17 | -15.81 | -24.68 | -30.43 |
| Ir_2_2 | -2.61 | -2.46 | -13.50 | -17.09 | -25.98 |
| Ir_2_3 | -5.31 | -6.68 | -13.74 | -17.85 | -29.71 |
| Ir_2_4 | -10.09 | -7.68 | -16.09 | -19.73 | -26.17 |
| Ir_2_5 | -3.59 | -8.71 | -12.44 | -23.32 | -27.51 |
| Ir_2_6 | -0.81 | -3.29 | -16.77 | -16.80 | -28.94 |
| Ir_2_7 | 11.24 | 7.70 | -1.53 | -5.69 | -13.15 |
| Ir_2_8 | -4.83 | -6.11 | -15.93 | -20.83 | -33.56 |
| Ir_2_9 | -3.68 | -6.04 | -20.22 | -23.15 | -33.22 |
| Ir_2_10 | -8.39 | -8.77 | -22.12 | -21.56 | -27.19 |
| Ir_2_11 | -6.11 | -6.04 | -22.20 | -20.45 | -25.92 |
| Ir_2_12 | -6.43 | -7.12 | -18.60 | -23.42 | -29.78 |
| Ir_2_13 | 1.87 | -3.40 | -14.83 | -14.20 | -19.62 |
| Ir_2_14 | -9.90 | -4.43 | -18.17 | -24.12 | -21.25 |
| Ir_2_16 | -6.72 | -1.87 | -18.82 | -21.06 | -22.84 |
| Ir_2_17 | -11.54 | -5.87 | -17.10 | -18.96 | -32.32 |
| Ir_2_18 | -8.51 | -4.49 | -13.26 | -21.02 | -27.71 |
| Ir_2_19 | -5.50 | -2.78 | -11.16 | -17.80 | -19.45 |
| Ir_2_20 | -0.54 | -5.19 | -8.17 | -16.65 | -25.25 |
| Ir_2_21 | -1.22 | -2.44 | -3.03 | -18.86 | -23.04 |
| Ir_2_22 | -4.82 | -3.44 | -11.16 | -15.52 | -17.12 |
| Ir_3_0 | -6.93 | -6.60 | -17.24 | -23.32 | -35.17 |
| Ir_3_1 | -2.30 | -3.38 | -16.42 | -22.80 | -29.47 |
| Ir_3_2 | 0.96 | -2.32 | -15.07 | -19.46 | -29.97 |
| Ir_3_3 | -0.04 | -1.57 | -8.76 | -17.55 | -28.85 |
| Ir_3_4 | -7.97 | -5.46 | -21.86 | -19.06 | -30.10 |
| Ir_3_5 | -1.58 | -3.45 | -18.38 | -19.57 | -31.22 |
| Ir_3_6 | -3.11 | 0.53 | -16.09 | -16.84 | -32.08 |
| Ir_3_8 | -4.93 | 1.77 | -16.30 | -15.35 | -27.33 |
| Ir_3_9 | -1.46 | -6.60 | -20.47 | -19.76 | -30.69 |
| Ir_3_10 | -2.58 | -2.27 | -16.73 | -22.34 | -28.69 |
| Ir_3_11 | -6.75 | -5.84 | -18.37 | -20.23 | -26.48 |
| Ir_3_12 | -2.45 | -4.27 | -14.33 | -16.28 | -23.16 |
| Ir_3_13 | 5.48 | 0.90 | -2.44 | -12.29 | -14.79 |
| Ir_3_14 | -4.72 | -6.32 | 8.55 | -22.66 | -25.67 |
| Ir_3_16 | -6.54 | -2.88 | -20.65 | -17.88 | -32.58 |
| Ir_3_17 | -5.58 | 0.25 | -18.53 | -16.94 | -27.42 |
| Ir_3_18 | -5.72 | -1.67 | -12.98 | -19.22 | -30.72 |
| Ir_3_19 | -5.46 | -2.12 | -16.40 | -21.05 | -25.54 |
| Ir_3_20 | -2.81 | -0.72 | -6.00 | -11.41 | -22.61 |
| Ir_3_21 | 3.97 | -8.80 | -9.38 | -15.02 | -23.45 |
| Ir_3_22 | 2.70 | 1.82 | -1.59 | -13.26 | -23.87 |
| Ir_4_0 | -10.69 | -7.48 | -22.68 | -24.07 | -35.31 |
| Ir_4_1 | -4.04 | -5.82 | -19.90 | -19.19 | -31.82 |
| Ir_4_2 | -9.14 | -4.69 | -18.48 | -27.61 | -35.50 |
| Ir_4_3 | -5.95 | -3.71 | -13.55 | -18.49 | -28.97 |
| Ir_4_4 | -9.38 | -7.16 | -18.91 | -19.61 | -29.46 |
| Ir_4_5 | -5.24 | -8.66 | -21.80 | -22.80 | -32.30 |
| Ir_4_6 | -8.85 | -2.99 | -21.64 | -22.08 | -30.05 |
| Ir_4_7 | 6.33 | -4.31 | -10.54 | -17.66 | -24.67 |
| Ir_4_8 | -10.92 | -8.22 | -19.86 | -20.89 | -34.09 |
| Ir_4_9 | -11.04 | -6.05 | -18.52 | -22.83 | -32.68 |
| Ir_4_10 | -9.56 | -8.68 | -20.88 | -21.24 | -33.81 |
| Ir_4_11 | -10.99 | -9.31 | -23.34 | -18.67 | -26.95 |
| Ir_4_12 | -8.92 | -7.13 | -21.05 | -21.89 | -30.91 |
| Ir_4_13 | -1.21 | -6.74 | -5.57 | -23.26 | -23.03 |

| | | | | | |
|---------|--------|--------|--------|--------|--------|
| Ir_4_14 | -8.68 | -4.68 | -21.10 | -21.15 | -30.99 |
| Ir_4_16 | -11.24 | -9.37 | -26.06 | -18.27 | -31.55 |
| Ir_4_17 | -14.02 | -9.50 | -24.85 | -21.65 | -29.78 |
| Ir_4_18 | -10.12 | -5.81 | -24.85 | -20.67 | -28.21 |
| Ir_4_19 | -9.54 | -7.60 | -25.40 | -17.28 | -27.66 |
| Ir_4_20 | -8.69 | -0.77 | -17.16 | -21.20 | -26.77 |
| Ir_4_21 | -6.23 | -7.54 | -16.68 | -16.13 | -30.54 |
| Ir_4_22 | 1.75 | 1.78 | -4.81 | -20.86 | -21.76 |
| Ir_5_0 | -9.08 | -7.02 | -23.30 | -23.65 | -35.57 |
| Ir_5_1 | -6.00 | -7.92 | -15.90 | -25.19 | -34.84 |
| Ir_5_2 | -1.81 | -5.25 | -14.46 | -20.67 | -31.48 |
| Ir_5_3 | -0.57 | -4.27 | -9.26 | -22.31 | -32.57 |
| Ir_5_4 | -8.99 | -5.65 | -22.66 | -22.31 | -28.13 |
| Ir_5_5 | -3.47 | -5.97 | -18.86 | -15.93 | -26.81 |
| Ir_5_6 | -15.43 | -14.04 | -21.35 | -29.62 | -34.05 |
| Ir_5_7 | 7.06 | 6.18 | 1.97 | -14.90 | -23.90 |
| Ir_5_8 | -9.07 | -5.93 | -21.46 | -21.44 | -33.81 |
| Ir_5_9 | -10.97 | -6.74 | -20.14 | -18.38 | -32.11 |
| Ir_5_10 | -13.43 | -9.28 | -25.90 | -22.87 | -35.94 |
| Ir_5_11 | -10.49 | -6.59 | -23.68 | -23.74 | -32.19 |
| Ir_5_12 | -8.81 | -3.28 | -22.36 | -21.62 | -28.96 |
| Ir_5_13 | 2.72 | -8.73 | -31.57 | -21.78 | -28.30 |
| Ir_5_14 | -6.89 | -3.69 | -18.21 | -20.49 | -31.07 |
| Ir_5_16 | -8.15 | -3.14 | -23.83 | -18.12 | -27.70 |
| Ir_5_17 | -12.54 | -11.06 | -21.64 | -20.47 | -32.01 |
| Ir_5_18 | -13.33 | -11.18 | -22.12 | -19.32 | -30.30 |
| Ir_5_19 | -9.66 | -5.47 | -23.75 | -21.03 | -26.77 |
| Ir_5_20 | -10.78 | -6.34 | -18.25 | -21.33 | -28.12 |
| Ir_5_21 | -7.41 | -5.06 | -20.44 | -24.28 | -32.59 |
| Ir_5_22 | 0.34 | -6.68 | -8.53 | -19.69 | -28.29 |
| Ir_6_0 | -9.36 | -8.03 | -21.08 | -22.81 | -33.34 |
| Ir_6_1 | -2.09 | -4.17 | -17.00 | -15.52 | -33.16 |
| Ir_6_2 | -0.17 | -7.32 | -13.10 | -21.70 | -33.56 |
| Ir_6_3 | 5.23 | 2.69 | -15.22 | -14.38 | -25.18 |
| Ir_6_4 | -9.04 | -7.93 | -18.79 | -19.87 | -28.05 |
| Ir_6_5 | -9.33 | -4.38 | -22.07 | -20.59 | -27.55 |
| Ir_6_6 | -8.30 | -4.67 | -17.66 | -16.09 | -27.06 |
| Ir_6_7 | 4.66 | 6.96 | 2.11 | -14.03 | -21.61 |
| Ir_6_8 | -1.62 | -7.83 | -21.62 | -19.87 | -29.65 |
| Ir_6_9 | -5.45 | -7.08 | -18.39 | -21.39 | -26.88 |
| Ir_6_10 | -7.48 | -10.12 | -20.67 | -21.52 | -34.03 |
| Ir_6_11 | -4.67 | -2.21 | -17.83 | -23.30 | -25.15 |
| Ir_6_12 | -9.37 | -11.14 | -28.70 | -20.48 | -35.86 |
| Ir_6_13 | 1.07 | -4.50 | -18.25 | -16.78 | -31.12 |
| Ir_6_14 | -8.88 | -2.96 | -23.65 | -18.52 | -32.50 |
| Ir_6_15 | 10.54 | -8.12 | -17.99 | -18.87 | -21.20 |
| Ir_6_16 | -7.53 | -9.87 | -26.33 | -24.23 | -30.13 |
| Ir_6_17 | -9.19 | -6.92 | -23.39 | -24.78 | -25.50 |
| Ir_6_18 | -14.08 | -6.93 | -28.14 | -27.27 | -34.45 |
| Ir_6_19 | -11.21 | -3.78 | -23.72 | -18.25 | -33.10 |
| Ir_6_20 | -8.63 | -3.60 | -25.36 | -17.45 | -30.98 |
| Ir_6_21 | -0.92 | -5.67 | -14.75 | -18.19 | -35.99 |
| Ir_6_22 | -5.91 | -4.54 | -11.35 | -24.20 | -29.98 |
| Ir_7_0 | -3.52 | -6.37 | -21.34 | -18.94 | -30.01 |
| Ir_7_1 | 0.96 | -1.07 | -11.51 | -19.48 | -26.03 |
| Ir_7_2 | -4.66 | -11.93 | -21.37 | -24.12 | -28.44 |
| Ir_7_3 | 19.31 | 9.47 | 5.72 | -12.62 | -11.52 |
| Ir_7_4 | -9.97 | -8.57 | -14.79 | -21.76 | -35.00 |
| Ir_7_5 | -1.73 | 2.06 | -10.15 | -22.39 | -28.55 |
| Ir_7_6 | -5.48 | -4.51 | -12.13 | -14.13 | -30.25 |

| | | | | | |
|---------|--------|--------|--------|--------|--------|
| Ir_7_8 | 9.88 | -0.69 | -3.52 | -12.35 | -21.75 |
| Ir_7_9 | 8.37 | 0.56 | -8.60 | -16.27 | -22.21 |
| Ir_7_10 | -3.40 | 1.08 | -10.43 | -16.77 | -26.80 |
| Ir_7_11 | 3.31 | -3.37 | -12.58 | -17.10 | -24.77 |
| Ir_7_12 | 0.59 | 5.88 | -10.06 | -13.01 | -26.46 |
| Ir_7_14 | 1.92 | -7.28 | -11.19 | -22.07 | -31.61 |
| Ir_7_16 | 2.91 | 0.20 | -14.74 | -20.82 | -22.66 |
| Ir_7_17 | 1.40 | -2.08 | -9.39 | -20.41 | -22.03 |
| Ir_7_18 | -0.46 | -1.44 | -13.90 | -19.70 | -21.14 |
| Ir_7_21 | 7.12 | 10.63 | -6.92 | -14.53 | -19.24 |
| Ir_7_22 | 5.28 | 1.72 | -10.86 | -16.80 | -26.18 |
| Ir_8_0 | -9.58 | -8.18 | -22.71 | -21.35 | -32.72 |
| Ir_8_1 | -5.65 | -9.27 | -24.41 | -21.93 | -30.75 |
| Ir_8_2 | 1.05 | -2.76 | -10.65 | -21.37 | -29.39 |
| Ir_8_3 | -7.87 | -9.06 | -26.10 | -23.09 | -26.47 |
| Ir_8_4 | -9.28 | -10.13 | -23.65 | -17.04 | -29.59 |
| Ir_8_5 | -4.54 | -5.27 | -16.49 | -19.98 | -26.61 |
| Ir_8_6 | -9.01 | -3.91 | -22.86 | -17.95 | -29.32 |
| Ir_8_7 | 15.03 | 9.14 | 7.36 | -21.13 | -2.99 |
| Ir_8_8 | -7.77 | -6.78 | -23.25 | -19.25 | -29.97 |
| Ir_8_9 | -7.86 | -6.54 | -15.76 | -22.78 | -30.65 |
| Ir_8_10 | -7.67 | -4.13 | -22.37 | -19.30 | -27.89 |
| Ir_8_11 | -9.90 | -5.81 | -21.84 | -21.38 | -28.67 |
| Ir_8_12 | -7.72 | -4.77 | -23.71 | -20.97 | -30.75 |
| Ir_8_13 | -0.52 | -0.64 | -11.13 | -14.76 | -17.34 |
| Ir_8_14 | -9.41 | -3.95 | -24.26 | -20.51 | -30.79 |
| Ir_8_15 | 2.94 | 1.72 | -10.21 | -16.06 | -18.45 |
| Ir_8_16 | -12.00 | -10.74 | -20.84 | -26.18 | -33.56 |
| Ir_8_17 | -11.42 | -4.45 | -25.89 | -17.40 | -26.58 |
| Ir_8_18 | -10.57 | -10.22 | -24.36 | -22.42 | -27.28 |
| Ir_8_19 | -10.94 | -10.03 | -22.45 | -22.31 | -27.77 |
| Ir_8_20 | -6.56 | -8.35 | -24.80 | -21.76 | -28.27 |
| Ir_8_21 | -3.98 | -8.33 | -18.97 | -26.17 | -26.68 |
| Ir_8_22 | -4.79 | -8.71 | -19.62 | -25.56 | -29.53 |
| Ir_9_0 | -10.30 | -10.16 | -21.89 | -24.13 | -32.98 |
| Ir_9_1 | -3.81 | -6.84 | -19.89 | -19.64 | -30.78 |
| Ir_9_2 | -0.71 | -1.92 | -12.73 | -17.74 | -27.11 |
| Ir_9_3 | -0.35 | -1.97 | -10.43 | -17.46 | -28.07 |
| Ir_9_4 | -9.84 | -6.89 | -22.43 | -23.15 | -31.56 |
| Ir_9_5 | -7.86 | -4.71 | -19.52 | -17.80 | -29.67 |
| Ir_9_6 | 3.51 | -1.70 | -23.03 | -20.24 | -28.48 |
| Ir_9_8 | -9.72 | -5.18 | -23.99 | -21.94 | -30.05 |
| Ir_9_9 | -8.98 | -4.63 | -20.01 | -22.67 | -30.68 |
| Ir_9_10 | -11.92 | -7.07 | -19.08 | -22.24 | -33.42 |
| Ir_9_11 | -11.81 | -6.58 | -25.56 | -21.15 | -30.89 |
| Ir_9_12 | -8.66 | -5.40 | -22.76 | -20.58 | -30.37 |
| Ir_9_13 | -5.31 | -4.54 | -15.60 | -12.30 | -23.84 |
| Ir_9_14 | -9.37 | -3.97 | -24.20 | -20.63 | -31.25 |
| Ir_9_15 | -2.00 | -7.15 | -20.08 | -21.82 | -23.53 |
| Ir_9_16 | -7.67 | -7.95 | -20.90 | -17.63 | -28.61 |
| Ir_9_17 | -13.48 | -7.91 | -24.84 | -23.92 | -27.27 |
| Ir_9_18 | -11.18 | -4.29 | -18.77 | -18.81 | -30.74 |
| Ir_9_19 | -11.22 | -8.40 | -16.54 | -25.76 | -30.46 |
| Ir_9_20 | -7.82 | -2.55 | -19.80 | -20.99 | -28.71 |
| Ir_9_21 | -7.24 | -6.27 | -12.52 | -18.08 | -31.66 |
| Ir_9_22 | -1.40 | -10.79 | -9.13 | -24.25 | -28.10 |
| Ir_10_0 | -9.47 | -6.77 | -21.63 | -21.22 | -30.25 |
| Ir_10_1 | -5.35 | -8.03 | -22.70 | -23.72 | -32.16 |
| Ir_10_2 | -4.39 | -3.40 | -12.55 | -22.31 | -27.29 |
| Ir_10_3 | 3.71 | 3.67 | -4.27 | -10.14 | -14.17 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Ir_10_4 | -9.09 | -3.45 | -24.55 | -21.98 | -33.28 |
| Ir_10_5 | -8.51 | -8.12 | -19.67 | -16.87 | -28.75 |
| Ir_10_6 | -7.14 | -8.29 | -19.92 | -16.81 | -30.29 |
| Ir_10_8 | -7.73 | -5.07 | -21.75 | -20.28 | -30.56 |
| Ir_10_9 | -8.77 | -5.23 | -22.46 | -20.71 | -28.54 |
| Ir_10_10 | -8.53 | -7.35 | -23.14 | -20.07 | -31.36 |
| Ir_10_11 | -9.94 | -5.83 | -23.44 | -20.06 | -31.45 |
| Ir_10_12 | -8.22 | -6.35 | -22.86 | -20.19 | -29.99 |
| Ir_10_13 | -3.20 | 3.96 | -8.44 | -16.91 | -17.90 |
| Ir_10_14 | -10.48 | -3.33 | -24.27 | -20.18 | -28.78 |
| Ir_10_15 | 6.37 | 1.70 | -5.34 | -15.75 | -10.38 |
| Ir_10_16 | -9.58 | -6.16 | -14.85 | -18.92 | -28.57 |
| Ir_10_17 | -12.60 | -9.61 | -21.78 | -25.79 | -32.89 |
| Ir_10_18 | -14.13 | -10.55 | -21.75 | -21.55 | -34.51 |
| Ir_10_19 | -12.90 | -9.30 | -24.20 | -24.24 | -30.74 |
| Ir_10_20 | -5.87 | -4.70 | -18.14 | -18.90 | -29.47 |
| Ir_10_21 | -6.45 | -0.29 | -13.70 | -16.49 | -31.37 |
| Ir_10_22 | 0.47 | -7.07 | -10.79 | -22.27 | -28.58 |
| Ir_11_0 | -10.45 | -6.56 | -24.22 | -22.05 | -31.96 |
| Ir_11_1 | -5.17 | -6.99 | -18.21 | -21.12 | -31.68 |
| Ir_11_2 | -3.68 | -0.55 | -9.06 | -20.13 | -26.25 |
| Ir_11_3 | -3.51 | -7.58 | -14.43 | -23.55 | -28.78 |
| Ir_11_4 | -10.92 | -9.56 | -26.49 | -21.58 | -32.01 |
| Ir_11_5 | -8.67 | -5.58 | -18.89 | -23.43 | -30.66 |
| Ir_11_6 | -12.04 | -7.65 | -23.02 | -24.34 | -32.57 |
| Ir_11_7 | 7.28 | -9.85 | 4.38 | -24.87 | -22.74 |
| Ir_11_8 | -8.14 | -4.26 | -23.51 | -17.34 | -30.24 |
| Ir_11_9 | -11.00 | -4.60 | -23.81 | -23.67 | -29.04 |
| Ir_11_10 | -10.07 | -5.38 | -18.14 | -21.98 | -28.29 |
| Ir_11_11 | -10.93 | -7.79 | -25.06 | -22.90 | -30.46 |
| Ir_11_12 | -7.97 | -2.08 | -20.48 | -20.23 | -29.37 |
| Ir_11_13 | -0.16 | -1.07 | -11.95 | -13.03 | -17.45 |
| Ir_11_14 | -10.52 | -6.87 | -23.97 | -21.49 | -27.51 |
| Ir_11_15 | 4.50 | -0.55 | -12.25 | 1.52 | -20.86 |
| Ir_11_16 | -12.61 | -10.32 | -23.32 | -23.74 | -31.53 |
| Ir_11_17 | -12.69 | -9.66 | -22.42 | -24.94 | -26.27 |
| Ir_11_18 | -10.65 | -0.65 | -18.17 | -23.58 | -30.31 |
| Ir_11_19 | -10.15 | -6.27 | -19.00 | -21.64 | -25.99 |
| Ir_11_20 | -10.28 | -7.37 | -21.11 | -17.49 | -30.14 |
| Ir_11_21 | -6.30 | -0.75 | -12.25 | -17.47 | -28.68 |
| Ir_11_22 | 2.51 | -4.80 | -16.69 | -20.78 | -25.64 |
| Ir_12_0 | -9.51 | -8.58 | -21.84 | -22.26 | -33.54 |
| Ir_12_1 | -7.87 | -5.40 | -17.74 | -23.85 | -30.21 |
| Ir_12_2 | -2.64 | -1.90 | -13.00 | -13.49 | -25.11 |
| Ir_12_3 | 1.13 | -4.22 | -17.28 | -18.26 | -26.97 |
| Ir_12_4 | -10.23 | -5.31 | -25.39 | -25.15 | -29.34 |
| Ir_12_5 | -7.72 | -6.10 | -18.31 | -21.26 | -30.12 |
| Ir_12_6 | -7.29 | -8.15 | -20.87 | -24.75 | -31.14 |
| Ir_12_7 | 13.40 | 8.82 | 4.23 | -14.97 | -11.60 |
| Ir_12_8 | -9.15 | -6.28 | -23.67 | -21.51 | -30.66 |
| Ir_12_9 | -8.65 | -7.48 | -23.22 | -21.61 | -31.19 |
| Ir_12_10 | -9.14 | -4.95 | -18.70 | -20.48 | -29.06 |
| Ir_12_11 | -11.90 | -6.09 | -18.97 | -21.48 | -31.93 |
| Ir_12_12 | -10.56 | -5.21 | -25.11 | -21.72 | -31.73 |
| Ir_12_13 | -3.82 | -10.06 | -5.82 | -21.54 | -24.27 |
| Ir_12_14 | -6.25 | -5.91 | -23.70 | -16.98 | -26.90 |
| Ir_12_15 | 6.60 | -1.40 | -4.41 | -19.48 | -24.25 |
| Ir_12_16 | -11.38 | -7.74 | -21.44 | -24.80 | -29.10 |
| Ir_12_17 | -10.10 | -5.20 | -18.12 | -16.22 | -30.79 |
| Ir_12_18 | -9.67 | -6.90 | -19.78 | -18.73 | -34.28 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Ir_12_19 | -14.03 | -8.75 | -27.98 | -23.55 | -32.97 |
| Ir_12_20 | -7.49 | -7.00 | -20.33 | -22.54 | -27.41 |
| Ir_12_21 | -10.11 | -12.58 | -21.14 | -23.34 | -30.49 |
| Ir_12_22 | 0.09 | -5.04 | -20.35 | -24.83 | -27.50 |
| Ir_13_0 | -3.83 | -9.55 | -17.42 | -25.63 | -31.57 |
| Ir_13_1 | -8.25 | -5.09 | -10.03 | -27.92 | -23.30 |
| Ir_13_2 | 5.48 | -1.64 | -14.62 | -22.15 | -24.04 |
| Ir_13_4 | -12.25 | -9.50 | -22.99 | -22.51 | -30.20 |
| Ir_13_5 | -10.66 | -12.30 | -10.97 | -24.23 | -25.61 |
| Ir_13_6 | -2.58 | -3.03 | -2.90 | -13.81 | -16.55 |
| Ir_13_8 | -9.24 | -11.04 | -24.53 | -26.04 | -30.98 |
| Ir_13_9 | -4.46 | -5.48 | -18.91 | -20.29 | -27.49 |
| Ir_13_10 | -2.53 | -2.55 | -12.46 | -13.33 | -22.72 |
| Ir_13_11 | -6.40 | -9.99 | -20.97 | -19.50 | -27.61 |
| Ir_13_12 | -4.83 | -7.78 | -21.73 | -22.46 | -26.89 |
| Ir_13_13 | 0.46 | -8.14 | -8.05 | -11.57 | -18.98 |
| Ir_13_14 | -2.65 | -1.35 | -17.77 | -20.63 | -26.34 |
| Ir_13_16 | -6.04 | -1.99 | -17.78 | -24.47 | -27.42 |
| Ir_13_17 | -10.82 | -7.50 | -15.10 | -24.69 | -25.73 |
| Ir_13_18 | -6.23 | -5.17 | -18.97 | -18.71 | -27.34 |
| Ir_13_19 | -8.02 | -2.69 | -16.41 | -18.13 | -24.89 |
| Ir_13_20 | -2.84 | -4.52 | -15.50 | -17.42 | -24.83 |
| Ir_13_21 | -3.99 | -6.57 | -14.12 | -24.04 | -28.72 |
| Ir_13_22 | 3.96 | -3.12 | -6.73 | -13.22 | -21.52 |
| Ir_14_0 | -10.27 | -8.51 | -23.65 | -23.16 | -32.53 |
| Ir_14_1 | -7.59 | -5.10 | -14.15 | -20.57 | -30.57 |
| Ir_14_2 | -7.30 | -1.73 | -17.49 | -21.89 | -24.18 |
| Ir_14_3 | -4.39 | -4.89 | -9.06 | -18.38 | -22.99 |
| Ir_14_4 | -7.78 | -4.00 | -19.98 | -22.43 | -28.94 |
| Ir_14_5 | -5.73 | -3.02 | -17.45 | -19.08 | -28.03 |
| Ir_14_6 | -7.55 | -7.11 | -18.93 | -18.31 | -29.92 |
| Ir_14_7 | 6.83 | 6.33 | -5.67 | -18.97 | -20.90 |
| Ir_14_8 | -8.13 | -5.28 | -23.85 | -20.18 | -27.88 |
| Ir_14_9 | -7.47 | -4.83 | -20.25 | -20.69 | -30.52 |
| Ir_14_10 | -7.74 | -3.63 | -24.61 | -21.49 | -25.85 |
| Ir_14_11 | -10.48 | -6.09 | -24.72 | -18.54 | -28.01 |
| Ir_14_12 | -8.14 | -4.33 | -23.77 | -22.36 | -28.29 |
| Ir_14_13 | 5.81 | -4.79 | -10.83 | -12.16 | -24.53 |
| Ir_14_14 | -9.13 | 0.28 | -19.36 | -19.43 | -29.76 |
| Ir_14_15 | 2.79 | -6.18 | -9.05 | -20.06 | -26.28 |
| Ir_14_16 | -9.21 | -7.50 | -18.20 | -21.78 | -29.87 |
| Ir_14_17 | -13.06 | -4.30 | -23.42 | -22.52 | -27.92 |
| Ir_14_18 | -9.62 | -6.90 | -20.83 | -23.63 | -30.72 |
| Ir_14_19 | -10.99 | -5.19 | -20.58 | -22.83 | -30.43 |
| Ir_14_20 | -6.62 | -3.13 | -19.20 | -17.84 | -30.21 |
| Ir_14_21 | -6.07 | -0.71 | -16.77 | -20.44 | -26.49 |
| Ir_14_22 | -4.52 | -8.13 | -14.66 | -23.00 | -27.65 |
| Ir_15_0 | -12.54 | -10.82 | -24.41 | -27.83 | -30.24 |
| Ir_15_1 | -7.54 | -8.48 | -16.17 | -27.75 | -34.64 |
| Ir_15_2 | -10.07 | -1.00 | -13.09 | -26.04 | -35.00 |
| Ir_15_4 | -15.14 | -15.76 | -30.16 | -27.54 | -39.23 |
| Ir_15_5 | -4.83 | -1.80 | -13.97 | -17.14 | -18.55 |
| Ir_15_6 | -4.90 | -7.44 | -15.18 | -21.65 | -20.64 |
| Ir_15_8 | -10.74 | -6.77 | -21.25 | -17.31 | -31.11 |
| Ir_15_9 | -3.25 | 0.89 | -14.31 | -23.48 | -27.76 |
| Ir_15_10 | -7.21 | -3.50 | -15.65 | -17.36 | -28.75 |
| Ir_15_11 | -3.83 | -6.05 | -15.44 | -21.03 | -26.31 |
| Ir_15_12 | -6.58 | -3.46 | -8.24 | -17.53 | -27.79 |
| Ir_15_13 | 5.82 | -15.60 | -9.91 | -23.35 | -26.69 |
| Ir_15_14 | -4.75 | 2.28 | -7.60 | -22.63 | -27.85 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Ir_15_16 | -7.86 | 1.87 | -4.72 | -21.31 | -28.86 |
| Ir_15_17 | -4.72 | -6.14 | -10.18 | -15.06 | -25.64 |
| Ir_15_18 | -14.99 | -14.63 | -27.63 | -25.20 | -34.31 |
| Ir_15_19 | -10.14 | -2.77 | -16.33 | -7.70 | -26.88 |
| Ir_15_20 | -1.44 | -2.93 | -20.15 | -19.90 | -29.73 |
| Ir_15_21 | -3.19 | -8.07 | -7.27 | -17.97 | -16.97 |
| Ir_15_22 | 10.25 | -1.55 | -10.64 | -15.59 | -26.74 |
| Ir_16_0 | -8.52 | -7.87 | -17.09 | -14.90 | -31.80 |
| Ir_16_1 | -4.48 | -2.51 | -14.09 | -23.30 | -31.21 |
| Ir_16_2 | -0.91 | -0.11 | -11.18 | -20.07 | -29.41 |
| Ir_16_3 | -2.44 | -0.50 | -9.01 | -18.05 | -25.06 |
| Ir_16_4 | -5.19 | -5.63 | -18.81 | -17.57 | -27.77 |
| Ir_16_5 | -10.61 | -8.58 | -25.93 | -25.51 | -31.46 |
| Ir_16_6 | -3.12 | -3.50 | -9.30 | -13.43 | -23.60 |
| Ir_16_7 | 13.68 | -0.06 | 1.80 | -19.65 | -20.92 |
| Ir_16_8 | -10.60 | -1.29 | -23.50 | -17.82 | -28.64 |
| Ir_16_9 | -8.25 | -5.92 | -16.11 | -17.89 | -28.75 |
| Ir_16_10 | -10.58 | -8.97 | -20.46 | -16.65 | -31.25 |
| Ir_16_11 | -9.62 | -7.65 | -20.00 | -22.76 | -29.34 |
| Ir_16_12 | -8.96 | -0.84 | -21.65 | -20.74 | -31.44 |
| Ir_16_13 | -0.52 | -7.02 | -14.99 | -12.53 | -23.60 |
| Ir_16_14 | -12.69 | -8.52 | -23.34 | -22.11 | -34.38 |
| Ir_16_16 | -12.99 | -7.71 | -23.32 | -18.52 | -27.35 |
| Ir_16_17 | -9.66 | -7.74 | -26.06 | -19.50 | -29.05 |
| Ir_16_18 | -12.09 | -6.58 | -15.06 | -20.01 | -27.33 |
| Ir_16_19 | -13.47 | -9.42 | -23.69 | -21.00 | -30.09 |
| Ir_16_20 | -9.81 | -7.13 | -19.34 | -17.10 | -30.42 |
| Ir_16_21 | 0.78 | -7.59 | -10.19 | -14.88 | -20.16 |
| Ir_16_22 | -1.11 | -7.09 | -16.82 | -13.24 | -21.39 |
| Ir_17_0 | -8.89 | -7.92 | -24.33 | -22.30 | -31.31 |
| Ir_17_1 | -7.30 | -6.98 | -18.93 | -16.60 | -31.78 |
| Ir_17_2 | -2.02 | -5.48 | -15.37 | -18.92 | -25.89 |
| Ir_17_3 | -4.94 | -6.35 | -10.69 | -21.70 | -30.11 |
| Ir_17_4 | -6.65 | -6.49 | -20.27 | -18.46 | -28.20 |
| Ir_17_5 | -7.16 | -8.17 | -16.62 | -20.09 | -26.24 |
| Ir_17_6 | -3.52 | -9.09 | -18.13 | -21.87 | -26.16 |
| Ir_17_7 | 13.21 | 4.64 | 0.58 | -1.06 | -18.89 |
| Ir_17_8 | -8.75 | -6.77 | -25.48 | -16.53 | -31.96 |
| Ir_17_9 | -13.18 | -13.22 | -21.86 | -22.91 | -34.81 |
| Ir_17_10 | -8.04 | -5.65 | -23.73 | -19.99 | -28.68 |
| Ir_17_11 | -10.07 | -2.22 | -22.22 | -18.04 | -27.80 |
| Ir_17_12 | -10.06 | -2.33 | -22.44 | -20.80 | -30.99 |
| Ir_17_13 | 0.17 | -4.90 | -11.00 | -17.47 | -19.72 |
| Ir_17_14 | -12.87 | -6.62 | -23.34 | -18.42 | -29.01 |
| Ir_17_15 | -1.54 | -5.94 | -14.31 | -24.44 | -22.77 |
| Ir_17_16 | -11.36 | -6.59 | -21.96 | -20.78 | -26.88 |
| Ir_17_17 | -14.16 | -8.01 | -26.08 | -20.95 | -26.92 |
| Ir_17_18 | -13.01 | -6.43 | -26.71 | -23.49 | -28.39 |
| Ir_17_19 | -13.72 | -7.27 | -25.48 | -22.01 | -29.43 |
| Ir_17_20 | -9.20 | -3.61 | -17.07 | -15.82 | -25.59 |
| Ir_17_21 | 1.86 | -0.62 | -12.00 | -23.20 | -27.06 |
| Ir_17_22 | -2.44 | -5.91 | -3.00 | -13.71 | -27.72 |
| Ir_18_0 | -7.40 | -5.46 | -17.90 | -23.71 | -31.36 |
| Ir_18_1 | -5.29 | -7.12 | -13.76 | -12.84 | -30.66 |
| Ir_18_2 | -3.90 | -5.38 | -11.86 | -20.80 | -28.55 |
| Ir_18_3 | 2.18 | -0.13 | -3.40 | -13.86 | -24.95 |
| Ir_18_4 | -8.02 | -4.60 | -17.48 | -14.51 | -26.36 |
| Ir_18_5 | -6.46 | -7.23 | -15.73 | -19.24 | -29.20 |
| Ir_18_6 | -7.07 | -5.81 | -17.75 | -19.60 | -26.46 |
| Ir_18_7 | 13.72 | 13.71 | -1.93 | -8.02 | -15.18 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Ir_18_8 | -8.47 | -8.84 | -24.40 | -18.81 | -32.35 |
| Ir_18_9 | -9.21 | -4.47 | -17.10 | -16.58 | -33.56 |
| Ir_18_10 | -11.68 | -3.68 | -25.27 | -21.48 | -32.48 |
| Ir_18_11 | -9.98 | -7.51 | -23.80 | -20.50 | -29.85 |
| Ir_18_12 | -6.69 | -6.91 | -24.62 | -19.38 | -29.62 |
| Ir_18_13 | -2.96 | -0.28 | -2.77 | -16.41 | -26.33 |
| Ir_18_14 | -12.70 | -10.49 | -18.46 | -15.60 | -32.65 |
| Ir_18_15 | -4.13 | -12.99 | -19.62 | -25.17 | -23.48 |
| Ir_18_16 | -11.27 | -8.22 | -23.56 | -22.47 | -29.24 |
| Ir_18_17 | -11.34 | -10.30 | -25.75 | -23.18 | -27.98 |
| Ir_18_18 | -14.24 | -6.63 | -24.34 | -21.87 | -29.70 |
| Ir_18_19 | -13.02 | -6.71 | -17.39 | -21.60 | -29.65 |
| Ir_18_20 | -8.71 | 0.29 | -17.87 | -19.63 | -26.88 |
| Ir_18_21 | -3.91 | -2.59 | -12.00 | -22.41 | -23.57 |
| Ir_18_22 | -1.03 | -0.65 | -9.21 | -18.26 | -21.03 |
| Ir_19_0 | -13.15 | -12.69 | -28.07 | -24.44 | -36.24 |
| Ir_19_1 | -4.21 | -7.68 | -14.42 | -13.56 | -28.64 |
| Ir_19_2 | 2.29 | -2.46 | -13.60 | -21.15 | -28.60 |
| Ir_19_3 | -2.51 | -6.56 | -10.86 | -18.64 | -24.84 |
| Ir_19_4 | -4.69 | -5.86 | -19.92 | -13.86 | -26.18 |
| Ir_19_5 | -3.19 | -3.82 | -13.94 | -18.28 | -27.09 |
| Ir_19_6 | -2.20 | -6.67 | -20.84 | -20.25 | -26.53 |
| Ir_19_8 | -9.89 | -6.33 | -24.20 | -17.20 | -29.55 |
| Ir_19_9 | -9.57 | -1.79 | -21.53 | -17.48 | -29.21 |
| Ir_19_10 | -9.14 | -6.64 | -15.90 | -24.97 | -30.74 |
| Ir_19_11 | -10.46 | -7.28 | -21.12 | -23.25 | -30.11 |
| Ir_19_12 | -7.01 | -3.45 | -20.89 | -16.23 | -24.48 |
| Ir_19_13 | -7.96 | -9.33 | -19.70 | -21.59 | -33.69 |
| Ir_19_14 | -9.72 | -6.43 | -22.32 | -24.46 | -32.67 |
| Ir_19_15 | -3.91 | -5.75 | -18.35 | -21.95 | -33.66 |
| Ir_19_16 | -11.04 | -7.44 | -23.68 | -21.53 | -29.90 |
| Ir_19_17 | -11.42 | -9.04 | -28.33 | -21.98 | -28.60 |
| Ir_19_18 | -9.91 | -6.79 | -21.32 | -21.90 | -27.99 |
| Ir_19_19 | -15.40 | -10.41 | -21.52 | -23.09 | -24.39 |
| Ir_19_20 | -6.86 | -8.78 | -25.88 | -20.51 | -30.86 |
| Ir_19_21 | -9.44 | -11.73 | -20.71 | -24.77 | -32.71 |
| Ir_19_22 | 0.56 | -4.03 | 2.42 | -18.93 | -14.96 |
| Ir_20_0 | -8.98 | -8.41 | -19.14 | -21.46 | -32.52 |
| Ir_20_1 | -5.94 | -5.77 | -19.09 | -20.05 | -29.71 |
| Ir_20_2 | 1.93 | -6.46 | -14.90 | -18.27 | -18.19 |
| Ir_20_3 | -1.84 | -4.30 | -3.16 | -16.20 | -25.98 |
| Ir_20_4 | -6.99 | -4.06 | -23.79 | -21.37 | -30.22 |
| Ir_20_5 | -5.76 | -7.08 | -19.70 | -19.16 | -22.64 |
| Ir_20_6 | -5.64 | -4.84 | -10.42 | -15.75 | -26.80 |
| Ir_20_7 | 4.01 | -3.00 | -1.66 | -11.37 | -20.47 |
| Ir_20_8 | -8.88 | -5.76 | -24.90 | -23.08 | -30.56 |
| Ir_20_9 | -7.98 | -5.58 | -20.66 | -21.43 | -30.29 |
| Ir_20_10 | -10.02 | -4.24 | -24.37 | -19.05 | -35.91 |
| Ir_20_11 | -9.91 | -5.35 | -15.05 | -20.23 | -31.30 |
| Ir_20_12 | -11.59 | -5.99 | -18.48 | -21.98 | -30.37 |
| Ir_20_13 | -9.63 | -7.21 | -16.62 | -19.98 | -24.89 |
| Ir_20_14 | -9.59 | -8.30 | -24.59 | -11.58 | -36.40 |
| Ir_20_15 | 0.44 | 3.20 | -2.15 | -11.83 | -26.29 |
| Ir_20_16 | -10.48 | -7.00 | -20.37 | -21.22 | -28.94 |
| Ir_20_17 | -10.52 | -9.93 | -21.63 | -21.18 | -26.41 |
| Ir_20_18 | -9.52 | -9.04 | -23.01 | -21.65 | -24.17 |
| Ir_20_19 | -12.58 | -9.30 | -23.34 | -19.42 | -29.55 |
| Ir_20_20 | -6.19 | -7.64 | -20.00 | -18.02 | -26.57 |
| Ir_20_21 | -3.97 | -5.79 | -12.83 | -22.01 | -28.34 |
| Ir_21_0 | -8.00 | -6.54 | -16.26 | -23.53 | -33.30 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Ir_21_1 | -5.90 | -5.48 | -12.32 | -20.37 | -31.00 |
| Ir_21_2 | 1.85 | -7.32 | -16.37 | -19.28 | -28.28 |
| Ir_21_3 | 3.72 | -3.50 | -8.54 | -20.33 | -26.53 |
| Ir_21_4 | -5.89 | -8.32 | -13.88 | -18.87 | -28.96 |
| Ir_21_5 | -7.42 | -6.49 | -17.23 | -19.72 | -30.68 |
| Ir_21_6 | -5.61 | -0.35 | -19.50 | -11.57 | -33.63 |
| Ir_21_8 | -8.23 | -5.13 | -21.92 | -21.51 | -32.52 |
| Ir_21_9 | -9.65 | -9.48 | -21.38 | -25.46 | -32.38 |
| Ir_21_10 | -3.96 | -3.81 | -23.46 | -25.42 | -30.56 |
| Ir_21_11 | -8.72 | -5.51 | -16.90 | -21.72 | -28.22 |
| Ir_21_12 | -6.22 | -7.93 | -19.41 | -23.85 | -30.37 |
| Ir_21_13 | -0.50 | -2.96 | -7.73 | -15.64 | -17.61 |
| Ir_21_14 | -7.99 | -9.56 | -23.12 | -23.85 | -35.13 |
| Ir_21_15 | 7.71 | 2.62 | -9.09 | -28.51 | -14.39 |
| Ir_21_16 | -12.03 | -6.31 | -24.66 | -22.65 | -30.35 |
| Ir_21_17 | -10.34 | -7.08 | -20.80 | -24.35 | -28.46 |
| Ir_21_18 | -7.66 | -4.20 | -17.66 | -22.84 | -22.49 |
| Ir_21_19 | -9.40 | 2.67 | -10.88 | -17.10 | -29.49 |
| Ir_21_20 | -7.16 | -5.54 | -16.33 | -19.02 | -27.08 |
| Ir_21_21 | 3.88 | -5.37 | -10.61 | -19.13 | -30.91 |
| Ir_21_22 | 2.69 | -0.42 | -6.34 | -18.24 | -24.33 |
| Ir_22_0 | -4.05 | -7.64 | -21.43 | -22.47 | -32.31 |
| Ir_22_1 | -1.72 | -3.04 | -5.15 | -21.63 | -29.23 |
| Ir_22_2 | 7.13 | -0.82 | -2.45 | -19.54 | -25.06 |
| Ir_22_3 | 2.47 | -0.94 | -7.15 | -16.42 | -25.37 |
| Ir_22_4 | -4.40 | -6.17 | -18.96 | -20.20 | -32.23 |
| Ir_22_5 | -3.89 | -3.96 | -18.30 | -18.09 | -32.12 |
| Ir_22_6 | -7.35 | -5.25 | -17.43 | -18.49 | -30.82 |
| Ir_22_8 | -8.34 | -10.28 | -17.66 | -22.80 | -32.51 |
| Ir_22_9 | -8.54 | -7.90 | -20.28 | -24.14 | -28.27 |
| Ir_22_10 | -4.26 | -5.82 | -16.99 | -16.68 | -26.58 |
| Ir_22_11 | -3.38 | -6.01 | -16.23 | -22.00 | -26.88 |
| Ir_22_12 | -4.97 | -2.28 | -18.41 | -26.55 | -28.70 |
| Ir_22_13 | -3.13 | -6.76 | -4.00 | -17.77 | -16.14 |
| Ir_22_14 | -7.12 | -6.25 | -16.17 | -27.85 | -29.46 |
| Ir_22_16 | -8.81 | -10.83 | -24.58 | -27.43 | -28.81 |
| Ir_22_17 | -9.65 | -5.10 | -18.82 | -18.57 | -29.13 |
| Ir_22_18 | -4.93 | -5.14 | -9.53 | -20.74 | -28.52 |
| Ir_22_19 | -12.45 | -3.24 | -24.36 | -20.83 | -29.66 |
| Ir_22_20 | -5.94 | -1.00 | -14.76 | -20.33 | -26.31 |
| Ir_22_21 | 3.07 | -8.03 | -16.90 | -23.61 | -28.37 |
| Ir_22_22 | 0.71 | -7.12 | -8.61 | -17.22 | -24.81 |

Table S2. Relative free energies of reaction steps for the initial data set of catalysts. Values in kcal/mol.

| | I2-->I3 | I3-->I4 | I4-->I5 | I5-->I6 | I6-->I7 | I7-->I2 | -ΔG(pds) | pds |
|--------|---------|---------|---------|---------|---------|---------|----------|---------|
| Co_0_0 | -10.81 | 4.56 | -23.79 | 4.58 | -1.76 | -3.53 | -4.58 | I5-->I6 |
| Co_0_1 | -9.65 | 4.85 | -23.24 | -0.64 | 5.93 | -8.00 | -5.93 | I6-->I7 |
| Co_0_2 | -9.54 | 3.89 | -20.37 | -1.27 | 2.08 | -5.52 | -3.89 | I3-->I4 |
| Co_0_3 | -1.94 | -3.71 | -11.48 | -3.91 | 1.51 | -11.21 | -1.51 | I6-->I7 |
| Co_0_4 | -13.46 | 7.18 | -25.69 | 4.71 | 0.58 | -4.05 | -7.18 | I3-->I4 |
| Co_0_5 | -7.81 | 4.98 | -19.22 | -2.19 | -0.69 | -5.80 | -4.98 | I3-->I4 |
| Co_0_6 | -10.58 | 3.67 | -26.81 | 4.20 | 0.12 | -1.34 | -4.20 | I5-->I6 |
| Co_0_7 | 2.29 | -3.47 | -15.38 | -0.28 | -1.09 | -12.81 | -2.29 | I2-->I3 |
| Co_0_8 | -9.52 | 3.27 | -20.86 | 2.18 | 0.80 | -6.61 | -3.27 | I3-->I4 |
| Co_0_9 | -9.99 | 2.21 | -21.09 | -0.28 | 4.21 | -5.80 | -4.21 | I6-->I7 |

| | | | | | | | | |
|---------|--------|-------|--------|--------|-------|--------|--------|--------|
| Co_0_10 | -10.95 | 4.20 | -22.18 | 1.93 | 3.57 | -7.30 | -4.20 | I3->I4 |
| Co_0_11 | -11.45 | 6.54 | -28.01 | 2.27 | 4.92 | -5.01 | -6.54 | I3->I4 |
| Co_0_12 | -9.29 | 2.81 | -19.54 | -0.45 | 4.26 | -8.54 | -4.26 | I6->I7 |
| Co_0_13 | -4.34 | -0.99 | -16.36 | -0.76 | 5.95 | -14.24 | -5.95 | I6->I7 |
| Co_0_14 | -11.38 | 5.84 | -25.61 | 5.33 | 1.08 | -6.01 | -5.84 | I3->I4 |
| Co_0_15 | 0.19 | -7.71 | -13.01 | -4.73 | 3.53 | -9.00 | -3.53 | I6->I7 |
| Co_0_16 | -9.05 | 7.94 | -21.53 | -6.76 | 5.86 | -7.21 | -7.94 | I3->I4 |
| Co_0_17 | -11.74 | 9.97 | -25.76 | -0.93 | 7.35 | -9.63 | -9.97 | I3->I4 |
| Co_0_18 | -8.34 | 1.64 | -17.58 | -1.19 | 2.51 | -7.78 | -2.51 | I6->I7 |
| Co_0_19 | -9.00 | 5.12 | -23.06 | -2.32 | 6.20 | -7.68 | -6.20 | I6->I7 |
| Co_0_20 | -10.52 | 8.29 | -17.95 | 1.56 | -2.09 | -10.03 | -8.29 | I3->I4 |
| Co_0_21 | -5.40 | -1.80 | -19.46 | 0.03 | 5.15 | -9.25 | -5.15 | I6->I7 |
| Co_0_22 | 1.44 | -3.46 | -16.94 | -4.58 | 1.78 | -8.98 | -1.78 | I6->I7 |
| Co_1_0 | -9.76 | 5.00 | -24.88 | 1.32 | 1.56 | -3.97 | -5.00 | I3->I4 |
| Co_1_1 | -3.05 | -1.22 | -21.80 | 0.46 | 0.73 | -5.87 | -0.73 | I6->I7 |
| Co_1_2 | -6.31 | 3.67 | -19.28 | 2.07 | -3.43 | -7.46 | -3.67 | I3->I4 |
| Co_1_3 | 0.27 | -2.19 | -18.79 | 0.67 | 2.38 | -13.07 | -2.38 | I6->I7 |
| Co_1_4 | -11.09 | 2.61 | -22.47 | 2.09 | 1.22 | -3.09 | -2.61 | I3->I4 |
| Co_1_5 | -8.88 | 8.97 | -20.41 | -4.26 | -1.19 | -4.98 | -8.97 | I3->I4 |
| Co_1_6 | -2.43 | -1.57 | -17.66 | 5.43 | -9.73 | -4.77 | -5.43 | I5->I6 |
| Co_1_7 | 13.27 | -3.39 | -12.74 | -4.03 | -8.32 | -15.53 | -13.27 | I2->I3 |
| Co_1_8 | -8.33 | 0.97 | -18.13 | -0.20 | 2.12 | -7.18 | -2.12 | I6->I7 |
| Co_1_9 | -9.67 | 2.97 | -16.65 | 1.25 | 0.52 | -9.15 | -2.97 | I3->I4 |
| Co_1_10 | -9.25 | 1.26 | -20.29 | 3.97 | 1.21 | -7.64 | -3.97 | I5->I6 |
| Co_1_11 | -7.29 | 3.38 | -22.54 | 5.20 | -2.34 | -7.16 | -5.20 | I5->I6 |
| Co_1_12 | -8.63 | -0.03 | -19.26 | 3.27 | -0.29 | -5.81 | -3.27 | I5->I6 |
| Co_1_13 | 6.19 | -8.12 | -12.56 | -4.12 | 19.01 | -31.14 | -19.01 | I6->I7 |
| Co_1_14 | -7.48 | 1.13 | -19.61 | 0.81 | 2.89 | -8.49 | -2.89 | I6->I7 |
| Co_1_16 | -11.87 | 6.45 | -18.77 | -6.05 | 3.41 | -3.91 | -6.45 | I3->I4 |
| Co_1_17 | -9.01 | 1.98 | -18.21 | 5.66 | 1.05 | -12.22 | -5.66 | I5->I6 |
| Co_1_18 | -5.67 | 6.32 | -20.83 | 2.40 | -2.55 | -10.42 | -6.32 | I3->I4 |
| Co_1_19 | -9.13 | 8.25 | -23.04 | 0.38 | 0.81 | -8.01 | -8.25 | I3->I4 |
| Co_1_20 | -9.20 | 0.43 | -14.74 | -1.20 | 3.83 | -9.87 | -3.83 | I6->I7 |
| Co_1_21 | -6.20 | 3.04 | -20.24 | -5.06 | 9.61 | -11.90 | -9.61 | I6->I7 |
| Co_1_22 | 0.15 | -4.07 | -18.17 | 4.18 | -0.18 | -12.64 | -4.18 | I5->I6 |
| Co_2_0 | -8.83 | 3.37 | -21.01 | 2.41 | -2.27 | -4.41 | -3.37 | I3->I4 |
| Co_2_1 | -1.45 | -2.74 | -18.64 | -5.81 | 5.96 | -8.05 | -5.96 | I6->I7 |
| Co_2_2 | -4.21 | 4.78 | -20.29 | 0.94 | 1.26 | -13.22 | -4.78 | I3->I4 |
| Co_2_3 | -5.10 | 1.24 | -17.84 | 1.18 | -0.67 | -9.54 | -1.24 | I3->I4 |
| Co_2_4 | -12.72 | 3.56 | -12.91 | -4.07 | 7.79 | -12.39 | -7.79 | I6->I7 |
| Co_2_5 | -5.58 | -2.09 | -9.05 | -6.12 | 1.53 | -9.43 | -1.53 | I6->I7 |
| Co_2_6 | -4.46 | 1.91 | -21.39 | 0.88 | -1.87 | -5.82 | -1.91 | I3->I4 |
| Co_2_7 | 5.41 | -3.05 | -16.11 | 8.59 | -6.66 | -18.92 | -8.59 | I5->I6 |
| Co_2_8 | -3.88 | -2.25 | -15.00 | -0.03 | -2.30 | -7.29 | 0.03 | I5->I6 |
| Co_2_9 | -4.17 | -1.61 | -19.56 | -0.61 | 1.84 | -6.62 | -1.84 | I6->I7 |
| Co_2_10 | -8.15 | 3.62 | -22.65 | 1.77 | 8.24 | -13.57 | -8.24 | I6->I7 |
| Co_2_11 | -5.86 | 2.53 | -24.09 | 2.00 | 9.08 | -14.39 | -9.08 | I6->I7 |
| Co_2_12 | -7.47 | -0.39 | -17.11 | -1.98 | 5.24 | -9.04 | -5.24 | I6->I7 |
| Co_2_13 | 1.90 | -2.02 | -19.80 | 3.11 | 4.66 | -18.59 | -4.66 | I6->I7 |
| Co_2_14 | -9.67 | 7.32 | -22.36 | -3.23 | 16.74 | -19.54 | -16.74 | I6->I7 |
| Co_2_16 | -5.91 | 4.45 | -22.01 | 3.42 | 7.89 | -18.59 | -7.89 | I6->I7 |
| Co_2_17 | -14.91 | 9.85 | -16.77 | -1.15 | -3.93 | -3.84 | -9.85 | I3->I4 |
| Co_2_18 | -11.91 | 8.61 | -15.25 | -7.01 | 3.25 | -8.43 | -8.61 | I3->I4 |
| Co_2_19 | -6.79 | 5.97 | -15.65 | -2.77 | 7.75 | -19.25 | -7.75 | I6->I7 |
| Co_2_20 | -4.25 | 2.30 | -12.53 | -4.66 | -0.04 | -11.56 | -2.30 | I3->I4 |
| Co_2_21 | -3.83 | 1.17 | -5.57 | -11.68 | 3.11 | -13.94 | -3.11 | I6->I7 |
| Co_2_22 | -4.21 | 3.14 | -13.30 | -0.13 | -4.32 | -11.92 | -3.14 | I3->I4 |
| Co_3_0 | -9.25 | 4.40 | -20.52 | 0.13 | -1.95 | -3.55 | -4.40 | I3->I4 |
| Co_3_1 | -3.11 | -2.16 | -18.22 | -2.92 | 4.07 | -8.40 | -4.07 | I6->I7 |
| Co_3_2 | -4.57 | 3.15 | -20.36 | 2.37 | -2.23 | -9.10 | -3.15 | I3->I4 |

| | | | | | | | | |
|---------|--------|-------|--------|--------|-------|--------|--------|--------|
| Co_3_3 | -0.15 | 0.89 | -15.46 | -3.32 | -2.62 | -10.07 | -0.89 | I3->I4 |
| Co_3_4 | -10.70 | 9.63 | -27.35 | 6.60 | -2.46 | -6.46 | -9.63 | I3->I4 |
| Co_3_5 | -5.17 | -0.89 | -18.48 | 2.81 | -3.77 | -5.23 | -2.81 | I5->I6 |
| Co_3_6 | -5.80 | 9.91 | -24.71 | 2.89 | -8.71 | -4.32 | -9.91 | I3->I4 |
| Co_3_8 | -5.14 | 6.15 | -21.61 | 5.00 | -4.98 | -10.17 | -6.15 | I3->I4 |
| Co_3_9 | -3.51 | -2.93 | -20.23 | 1.26 | 2.84 | -8.16 | -2.84 | I6->I7 |
| Co_3_10 | -3.04 | -0.49 | -17.43 | -4.77 | 4.11 | -9.12 | -4.11 | I6->I7 |
| Co_3_11 | -5.13 | 2.72 | -21.15 | 5.73 | -1.00 | -11.90 | -5.73 | I5->I6 |
| Co_3_12 | -3.40 | 0.93 | -17.12 | -3.33 | 6.89 | -14.71 | -6.89 | I6->I7 |
| Co_3_13 | 3.55 | -0.32 | -10.22 | -7.47 | 9.61 | -25.90 | -9.61 | I6->I7 |
| Co_3_14 | -3.99 | 1.26 | -21.15 | -0.27 | 4.92 | -11.51 | -4.92 | I6->I7 |
| Co_3_16 | -9.90 | 10.11 | -26.00 | 4.57 | -5.97 | -3.55 | -10.11 | I3->I4 |
| Co_3_17 | -4.74 | 5.71 | -23.98 | 6.01 | -3.11 | -10.63 | -6.01 | I5->I6 |
| Co_3_18 | -8.87 | 5.08 | -16.67 | -1.35 | -4.75 | -4.19 | -5.08 | I3->I4 |
| Co_3_19 | -6.97 | 4.17 | -18.21 | -2.58 | 3.69 | -10.83 | -4.17 | I3->I4 |
| Co_3_20 | -4.79 | 4.73 | -10.98 | -6.50 | -0.10 | -13.09 | -4.73 | I3->I4 |
| Co_3_21 | -1.13 | -5.65 | -8.37 | -2.61 | 2.14 | -15.11 | -2.14 | I6->I7 |
| Co_3_22 | 1.70 | 2.38 | -11.23 | -5.25 | -3.94 | -14.40 | -2.38 | I3->I4 |
| Co_4_0 | -13.48 | 8.79 | -24.61 | -0.23 | 1.24 | -2.46 | -8.79 | I3->I4 |
| Co_4_1 | -5.91 | 2.38 | -21.97 | 4.18 | -4.66 | -4.76 | -4.18 | I5->I6 |
| Co_4_2 | -10.57 | 5.55 | -18.81 | -8.00 | 5.08 | -4.00 | -5.55 | I3->I4 |
| Co_4_3 | -5.88 | 4.07 | -17.39 | 0.79 | -2.57 | -9.76 | -4.07 | I3->I4 |
| Co_4_4 | -11.53 | 8.73 | -22.01 | -2.83 | 4.64 | -7.75 | -8.73 | I3->I4 |
| Co_4_5 | -8.46 | 2.39 | -22.12 | 0.28 | 1.72 | -4.54 | -2.39 | I3->I4 |
| Co_4_6 | -12.12 | 7.30 | -24.01 | -0.30 | 5.55 | -7.16 | -7.30 | I3->I4 |
| Co_4_7 | 5.39 | -5.28 | -15.76 | -0.90 | -0.17 | -14.03 | -5.39 | I2->I3 |
| Co_4_8 | -12.32 | 3.20 | -16.22 | -4.00 | 2.45 | -3.84 | -3.20 | I3->I4 |
| Co_4_9 | -9.49 | 5.28 | -17.39 | -0.06 | -2.70 | -6.38 | -5.28 | I3->I4 |
| Co_4_10 | -9.41 | 0.49 | -16.40 | 5.85 | -6.64 | -4.63 | -5.85 | I5->I6 |
| Co_4_11 | -9.32 | 1.88 | -18.06 | -0.76 | 6.57 | -11.06 | -6.57 | I6->I7 |
| Co_4_12 | -12.76 | 3.63 | -18.42 | 0.59 | 1.37 | -5.16 | -3.63 | I3->I4 |
| Co_4_13 | -5.23 | 3.99 | -8.39 | -12.27 | 6.86 | -15.70 | -6.86 | I6->I7 |
| Co_4_14 | -9.60 | 4.56 | -22.54 | 2.49 | -0.21 | -5.45 | -4.56 | I3->I4 |
| Co_4_16 | -14.16 | 8.38 | -25.70 | 11.60 | -4.92 | -5.94 | -11.60 | I5->I6 |
| Co_4_17 | -18.25 | 5.42 | -20.40 | 10.10 | -4.70 | -2.92 | -10.10 | I5->I6 |
| Co_4_18 | -17.15 | 2.30 | -20.62 | 3.66 | 3.86 | -2.78 | -3.86 | I6->I7 |
| Co_4_19 | -9.77 | 8.40 | -28.56 | 8.78 | 3.71 | -13.30 | -8.78 | I5->I6 |
| Co_4_20 | -14.04 | 7.92 | -18.50 | -0.50 | 2.70 | -8.32 | -7.92 | I3->I4 |
| Co_4_21 | -6.62 | 5.43 | -21.48 | 6.36 | -8.03 | -6.40 | -6.36 | I5->I6 |
| Co_4_22 | 1.42 | -0.10 | -15.09 | -4.58 | 5.26 | -17.64 | -5.26 | I6->I7 |
| Co_5_0 | -12.14 | 7.41 | -25.91 | 1.13 | -0.41 | -0.81 | -7.41 | I3->I4 |
| Co_5_1 | -8.49 | 1.32 | -18.55 | -5.66 | 0.86 | -0.23 | -1.32 | I3->I4 |
| Co_5_2 | -2.91 | -4.02 | -13.70 | -3.12 | -4.26 | -2.72 | 2.72 | I7->I2 |
| Co_5_3 | -0.68 | -1.72 | -13.73 | -3.96 | -4.15 | -6.51 | 0.68 | I2->I3 |
| Co_5_4 | -12.60 | 8.81 | -26.86 | 3.67 | 4.39 | -8.15 | -8.81 | I3->I4 |
| Co_5_5 | -9.71 | 7.07 | -24.92 | 1.59 | 3.65 | -8.42 | -7.07 | I3->I4 |
| Co_5_6 | -19.30 | 5.62 | -17.09 | -1.23 | 4.20 | -2.94 | -5.62 | I3->I4 |
| Co_5_7 | 8.11 | 2.67 | -14.08 | -9.44 | -0.21 | -17.79 | -8.11 | I2->I3 |
| Co_5_8 | -8.99 | 0.79 | -18.50 | 4.77 | -1.76 | -7.06 | -4.77 | I5->I6 |
| Co_5_9 | -11.00 | 3.80 | -18.57 | 3.84 | -5.34 | -3.48 | -3.84 | I5->I6 |
| Co_5_10 | -11.88 | 5.44 | -24.08 | 7.01 | -1.92 | -5.31 | -7.01 | I5->I6 |
| Co_5_11 | -10.32 | 0.69 | -19.67 | 5.17 | 0.53 | -7.13 | -5.17 | I5->I6 |
| Co_5_12 | -10.99 | 5.57 | -24.84 | 6.71 | -0.22 | -6.98 | -6.71 | I5->I6 |
| Co_5_13 | 3.37 | -9.35 | -2.24 | -12.12 | 3.13 | -13.53 | -3.37 | I2->I3 |
| Co_5_14 | -9.28 | 0.89 | -16.26 | -1.78 | 2.51 | -6.83 | -2.51 | I6->I7 |
| Co_5_16 | -10.57 | 11.48 | -31.77 | 10.89 | -1.19 | -9.57 | -11.48 | I3->I4 |
| Co_5_17 | -13.29 | 7.28 | -20.90 | 3.02 | 0.49 | -7.34 | -7.28 | I3->I4 |
| Co_5_18 | -15.16 | -1.01 | -10.58 | 6.20 | -4.15 | -6.03 | -6.20 | I5->I6 |
| Co_5_19 | -13.58 | 4.31 | -22.06 | 6.36 | 2.44 | -8.20 | -6.36 | I5->I6 |
| Co_5_20 | -15.86 | 9.20 | -18.62 | 2.18 | -0.37 | -7.27 | -9.20 | I3->I4 |

| | | | | | | | | |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|
| Co_5_21 | -8.22 | 5.49 | -23.66 | 1.99 | 0.03 | -6.36 | -5.49 | I3->I4 |
| Co_5_22 | -0.75 | -2.08 | -10.09 | -5.02 | -3.95 | -8.86 | 0.75 | I2->I3 |
| Co_6_0 | -11.44 | 6.89 | -23.24 | 3.42 | 0.59 | -6.96 | -6.89 | I3->I4 |
| Co_6_1 | -4.63 | 0.69 | -20.56 | 5.81 | -6.13 | -5.92 | -5.81 | I5->I6 |
| Co_6_2 | -0.90 | -3.56 | -14.30 | -2.48 | -5.15 | -4.36 | 0.90 | I2->I3 |
| Co_6_3 | 3.39 | 2.56 | -26.30 | 3.66 | -2.13 | -11.93 | -3.66 | I5->I6 |
| Co_6_4 | -11.61 | -1.72 | -13.37 | 3.91 | -0.78 | -7.18 | -3.91 | I5->I6 |
| Co_6_5 | -13.42 | 10.06 | -27.16 | 7.60 | 2.23 | -10.05 | -10.06 | I3->I4 |
| Co_6_6 | -11.29 | 4.74 | -18.41 | 6.28 | -3.28 | -8.78 | -6.28 | I5->I6 |
| Co_6_7 | 5.63 | 7.18 | -14.72 | -8.85 | 1.24 | -21.23 | -7.18 | I3->I4 |
| Co_6_8 | -3.77 | -6.01 | -18.31 | 9.07 | -3.43 | -8.28 | -9.07 | I5->I6 |
| Co_6_9 | -6.43 | -0.47 | -16.84 | 3.66 | 0.57 | -11.23 | -3.66 | I5->I6 |
| Co_6_10 | -8.60 | 0.16 | -19.53 | -0.20 | 1.15 | -3.72 | -1.15 | I6->I7 |
| Co_6_11 | -7.85 | 5.65 | -21.57 | -0.98 | 3.78 | -9.76 | -5.65 | I3->I4 |
| Co_6_12 | -11.71 | 4.92 | -26.43 | 3.27 | 0.77 | -1.56 | -4.92 | I3->I4 |
| Co_6_13 | 2.24 | -5.37 | -19.17 | 2.38 | -1.38 | -9.43 | -2.38 | I5->I6 |
| Co_6_14 | -12.15 | 11.43 | -31.20 | 13.61 | -9.24 | -3.18 | -13.61 | I5->I6 |
| Co_6_15 | 19.00 | -9.10 | -29.20 | 2.86 | 11.22 | -25.52 | -19.00 | I2->I3 |
| Co_6_16 | -11.80 | 2.95 | -25.19 | 7.70 | 1.16 | -5.56 | -7.70 | I5->I6 |
| Co_6_17 | -14.49 | 3.78 | -19.89 | 3.10 | 7.03 | -10.27 | -7.03 | I6->I7 |
| Co_6_18 | -15.11 | 6.14 | -27.07 | 6.75 | -1.66 | 0.21 | -6.75 | I5->I6 |
| Co_6_19 | -12.33 | 12.56 | -28.14 | 9.09 | -5.81 | -6.11 | -12.56 | I3->I4 |
| Co_6_20 | -11.28 | 1.84 | -24.31 | 13.76 | -5.24 | -5.51 | -13.76 | I5->I6 |
| Co_6_21 | -2.96 | 0.34 | -21.03 | 2.84 | -7.43 | -2.50 | -2.84 | I5->I6 |
| Co_6_22 | -8.09 | 4.89 | -15.83 | -6.39 | 5.02 | -10.34 | -5.02 | I6->I7 |
| Co_7_0 | -6.35 | 1.56 | -24.28 | 7.37 | -1.10 | -7.94 | -7.37 | I5->I6 |
| Co_7_1 | -0.28 | 1.17 | -14.81 | -8.62 | 4.86 | -13.06 | -4.86 | I6->I7 |
| Co_7_2 | -6.21 | -4.83 | -16.91 | 0.30 | 6.34 | -9.42 | -6.34 | I6->I7 |
| Co_7_3 | 17.65 | -5.70 | -12.81 | -12.02 | 9.34 | -27.21 | -17.65 | I2->I3 |
| Co_7_4 | -11.83 | 10.16 | -18.05 | -2.41 | -3.14 | -5.46 | -10.16 | I3->I4 |
| Co_7_5 | -3.04 | 6.03 | -18.90 | -9.80 | 3.38 | -8.41 | -6.03 | I3->I4 |
| Co_7_6 | -3.35 | 2.74 | -15.35 | 4.40 | -10.01 | -9.18 | -4.40 | I5->I6 |
| Co_7_8 | 9.71 | -9.69 | -7.17 | -3.41 | -2.13 | -18.05 | -9.71 | I2->I3 |
| Co_7_9 | 5.38 | -5.82 | -14.62 | 0.79 | -0.65 | -15.82 | -5.38 | I2->I3 |
| Co_7_10 | -2.29 | 5.30 | -17.34 | -1.59 | -1.18 | -13.65 | -5.30 | I3->I4 |
| Co_7_11 | 5.30 | -4.02 | -19.28 | -5.85 | 7.59 | -14.47 | -7.59 | I6->I7 |
| Co_7_12 | 1.69 | 6.24 | -22.77 | 0.23 | -3.84 | -12.30 | -6.24 | I3->I4 |
| Co_7_14 | 3.08 | 2.19 | -22.77 | -3.27 | -2.30 | -7.67 | -3.08 | I2->I3 |
| Co_7_16 | 1.38 | 3.39 | -25.63 | 1.74 | 4.08 | -15.70 | -4.08 | I6->I7 |
| Co_7_17 | -0.67 | 0.17 | -16.95 | -1.30 | 3.19 | -15.17 | -3.19 | I6->I7 |
| Co_7_18 | -2.91 | 4.60 | -20.25 | -1.39 | 2.73 | -13.51 | -4.60 | I3->I4 |
| Co_7_21 | 7.88 | -0.81 | -18.21 | -2.50 | 4.18 | -21.28 | -7.88 | I2->I3 |
| Co_7_22 | 3.69 | 1.82 | -22.52 | -3.38 | 1.51 | -11.86 | -3.69 | I2->I3 |
| Co_8_0 | -12.43 | 5.50 | -24.81 | 5.28 | 0.89 | -5.16 | -5.50 | I3->I4 |
| Co_8_1 | -6.76 | -0.75 | -24.33 | 6.36 | 1.84 | -7.11 | -6.36 | I5->I6 |
| Co_8_2 | 0.08 | -3.37 | -13.29 | -6.92 | 2.19 | -9.43 | -2.19 | I6->I7 |
| Co_8_3 | -7.35 | 0.18 | -24.34 | 7.13 | 5.90 | -12.25 | -7.13 | I5->I6 |
| Co_8_4 | -11.93 | 1.35 | -18.99 | 9.02 | -2.16 | -8.03 | -9.02 | I5->I6 |
| Co_8_5 | -10.04 | 8.65 | -17.51 | -6.63 | 6.09 | -11.29 | -8.65 | I3->I4 |
| Co_8_6 | -12.05 | 10.43 | -29.33 | 11.04 | -4.16 | -6.66 | -11.04 | I5->I6 |
| Co_8_7 | 15.45 | -4.39 | -9.87 | -19.88 | 25.68 | -37.73 | -25.68 | I6->I7 |
| Co_8_8 | -10.36 | 3.40 | -22.27 | 4.11 | 2.59 | -8.21 | -4.11 | I5->I6 |
| Co_8_9 | -9.49 | 2.05 | -16.21 | 2.59 | -2.52 | -7.17 | -2.59 | I5->I6 |
| Co_8_10 | -9.68 | 2.35 | -20.81 | 5.01 | 1.23 | -8.84 | -5.01 | I5->I6 |
| Co_8_11 | -10.58 | 2.12 | -18.18 | 0.49 | 4.37 | -8.96 | -4.37 | I6->I7 |
| Co_8_12 | -10.00 | 7.80 | -27.41 | 5.03 | 0.86 | -7.02 | -7.80 | I3->I4 |
| Co_8_13 | 0.77 | 1.06 | -18.21 | 0.35 | 8.26 | -22.96 | -8.26 | I6->I7 |
| Co_8_14 | -11.00 | 8.91 | -28.90 | 7.43 | -1.09 | -6.09 | -8.91 | I3->I4 |
| Co_8_15 | 8.81 | -0.56 | -19.44 | -0.06 | 8.61 | -28.10 | -8.81 | I2->I3 |
| Co_8_16 | -11.86 | 6.57 | -19.40 | -0.69 | -0.28 | -5.07 | -6.57 | I3->I4 |

| | | | | | | | | |
|----------|--------|--------|--------|--------|-------|--------|--------|--------|
| Co_8_17 | -15.20 | 13.32 | -31.38 | 11.29 | -1.53 | -7.25 | -13.32 | I3->I4 |
| Co_8_18 | -13.37 | 4.07 | -22.30 | 2.63 | 5.76 | -7.52 | -5.76 | I6->I7 |
| Co_8_19 | -13.30 | 6.77 | -21.26 | 5.46 | -2.82 | -5.59 | -6.77 | I3->I4 |
| Co_8_20 | -5.37 | 2.28 | -24.85 | 8.40 | -1.20 | -10.00 | -8.40 | I5->I6 |
| Co_8_21 | -11.20 | -1.94 | -18.40 | -2.81 | 10.24 | -6.64 | -10.24 | I6->I7 |
| Co_8_22 | -8.00 | 2.16 | -21.76 | -1.25 | 4.85 | -6.75 | -4.85 | I6->I7 |
| Co_9_0 | -12.46 | 5.21 | -21.00 | 0.90 | 3.48 | -6.86 | -5.21 | I3->I4 |
| Co_9_1 | -3.90 | 0.58 | -23.49 | 0.06 | 4.59 | -8.59 | -4.59 | I6->I7 |
| Co_9_2 | -3.96 | 2.50 | -16.22 | -4.10 | 0.90 | -9.87 | -2.50 | I3->I4 |
| Co_9_3 | -1.60 | 2.03 | -16.56 | -2.80 | -2.01 | -9.81 | -2.03 | I3->I4 |
| Co_9_4 | -10.88 | 2.53 | -20.58 | 2.54 | 1.86 | -6.21 | -2.54 | I5->I6 |
| Co_9_5 | -12.15 | 7.83 | -21.71 | 0.92 | -0.03 | -5.60 | -7.83 | I3->I4 |
| Co_9_6 | 2.72 | -2.87 | -30.26 | 1.44 | 4.63 | -6.40 | -4.63 | I6->I7 |
| Co_9_8 | -11.56 | 8.86 | -28.13 | 3.00 | 4.04 | -6.94 | -8.86 | I3->I4 |
| Co_9_9 | -9.96 | 7.44 | -23.88 | 5.26 | -4.08 | -5.52 | -7.44 | I3->I4 |
| Co_9_10 | -11.32 | 8.11 | -20.13 | -5.20 | 3.95 | -6.16 | -8.11 | I3->I4 |
| Co_9_11 | -10.88 | 10.44 | -28.96 | 7.78 | -0.67 | -8.45 | -10.44 | I3->I4 |
| Co_9_12 | -11.75 | 2.99 | -21.42 | 3.02 | 3.23 | -6.81 | -3.23 | I6->I7 |
| Co_9_13 | -4.27 | 2.56 | -19.24 | 6.27 | -2.10 | -13.95 | -6.27 | I5->I6 |
| Co_9_14 | -10.70 | 9.26 | -27.99 | 3.88 | 1.24 | -6.43 | -9.26 | I3->I4 |
| Co_9_15 | 0.61 | -4.60 | -19.40 | 0.60 | 12.70 | -20.65 | -12.70 | I6->I7 |
| Co_9_16 | -8.74 | 3.00 | -19.31 | -1.55 | 4.14 | -8.27 | -4.14 | I6->I7 |
| Co_9_17 | -15.96 | 11.74 | -26.80 | 1.20 | 6.61 | -7.52 | -11.74 | I3->I4 |
| Co_9_18 | -14.21 | 12.06 | -23.51 | 4.91 | -3.09 | -6.89 | -12.06 | I3->I4 |
| Co_9_19 | -14.16 | 7.60 | -15.92 | -4.80 | 1.15 | -4.61 | -7.60 | I3->I4 |
| Co_9_20 | -9.94 | 3.28 | -19.91 | 6.29 | -3.55 | -6.90 | -6.29 | I5->I6 |
| Co_9_21 | -10.90 | 3.99 | -12.13 | -2.68 | -4.29 | -4.73 | -3.99 | I3->I4 |
| Co_9_22 | 4.96 | -4.75 | -13.42 | -6.23 | 3.87 | -15.17 | -4.96 | I2->I3 |
| Co_10_0 | -12.91 | 7.17 | -23.75 | 1.99 | 3.78 | -7.02 | -7.17 | I3->I4 |
| Co_10_1 | -7.16 | 0.39 | -23.69 | 4.14 | 0.41 | -4.82 | -4.14 | I5->I6 |
| Co_10_2 | -6.68 | 5.01 | -18.91 | -2.59 | 0.94 | -8.52 | -5.01 | I3->I4 |
| Co_10_3 | 2.93 | 3.34 | -17.35 | -1.40 | 5.68 | -23.94 | -5.68 | I6->I7 |
| Co_10_4 | -12.47 | 6.49 | -26.79 | 9.16 | -2.73 | -4.39 | -9.16 | I5->I6 |
| Co_10_5 | -9.46 | 0.63 | -15.97 | 6.38 | -3.81 | -8.51 | -6.38 | I5->I6 |
| Co_10_6 | -7.06 | 2.12 | -19.88 | 9.07 | -7.38 | -7.60 | -9.07 | I5->I6 |
| Co_10_8 | -10.58 | 8.93 | -26.23 | 1.48 | 2.98 | -7.32 | -8.93 | I3->I4 |
| Co_10_9 | -9.77 | 9.83 | -26.05 | 3.59 | 2.86 | -11.20 | -9.83 | I3->I4 |
| Co_10_10 | -11.18 | 3.35 | -21.48 | 4.98 | 0.59 | -7.00 | -4.98 | I5->I6 |
| Co_10_11 | -11.34 | 9.46 | -27.70 | 5.11 | 0.46 | -6.74 | -9.46 | I3->I4 |
| Co_10_12 | -9.77 | 3.90 | -23.25 | 8.32 | -1.95 | -8.00 | -8.32 | I5->I6 |
| Co_10_13 | -2.96 | 7.80 | -18.47 | -4.57 | 6.98 | -19.52 | -7.80 | I3->I4 |
| Co_10_14 | -10.84 | 8.48 | -27.55 | 5.12 | 5.72 | -11.66 | -8.48 | I3->I4 |
| Co_10_15 | 7.65 | -4.66 | -14.94 | -4.01 | 15.72 | -30.50 | -15.72 | I6->I7 |
| Co_10_16 | -11.73 | 8.90 | -17.08 | -7.58 | 5.33 | -8.57 | -8.90 | I3->I4 |
| Co_10_17 | -14.41 | 7.83 | -20.32 | -0.17 | -0.40 | -3.28 | -7.83 | I3->I4 |
| Co_10_18 | -17.40 | 5.35 | -15.68 | -1.34 | 1.26 | -2.92 | -5.35 | I3->I4 |
| Co_10_19 | -13.30 | 1.66 | -17.53 | 5.82 | -2.38 | -5.02 | -5.82 | I5->I6 |
| Co_10_20 | -10.04 | 5.80 | -21.21 | 4.08 | -2.15 | -7.21 | -5.80 | I3->I4 |
| Co_10_21 | -9.89 | 9.38 | -21.55 | 2.20 | -5.79 | -5.09 | -9.38 | I3->I4 |
| Co_10_22 | 0.54 | -6.10 | -10.67 | -8.09 | 3.15 | -9.57 | -3.15 | I6->I7 |
| Co_11_0 | -13.67 | 8.55 | -27.17 | 7.46 | 1.95 | -7.85 | -8.55 | I3->I4 |
| Co_11_1 | -5.13 | -0.01 | -20.86 | 4.76 | -2.36 | -7.14 | -4.76 | I5->I6 |
| Co_11_2 | -4.92 | 6.85 | -18.28 | -7.24 | 3.15 | -10.31 | -6.85 | I3->I4 |
| Co_11_3 | -3.58 | -4.55 | -11.58 | -0.77 | 0.57 | -10.83 | -0.57 | I6->I7 |
| Co_11_4 | -13.20 | 2.55 | -22.60 | 2.76 | 6.23 | -6.48 | -6.23 | I6->I7 |
| Co_11_5 | -7.81 | 4.34 | -18.79 | -1.41 | 1.94 | -9.00 | -4.34 | I3->I4 |
| Co_11_6 | -12.49 | 6.48 | -21.40 | 3.23 | -0.52 | -6.05 | -6.48 | I3->I4 |
| Co_11_7 | 10.28 | -12.85 | 2.71 | -19.44 | 7.89 | -19.33 | -10.28 | I2->I3 |
| Co_11_8 | -10.33 | 8.78 | -27.73 | 6.17 | 0.01 | -7.64 | -8.78 | I3->I4 |
| Co_11_9 | -10.37 | 8.60 | -26.28 | 7.47 | 0.70 | -10.85 | -8.60 | I3->I4 |

| | | | | | | | | |
|----------|--------|-------|--------|--------|--------|--------|--------|--------|
| Co_11_10 | -10.63 | 10.82 | -23.30 | -2.92 | 4.72 | -9.44 | -10.82 | I3->I4 |
| Co_11_11 | -10.81 | 1.99 | -20.25 | 1.58 | 5.90 | -9.15 | -5.90 | I6->I7 |
| Co_11_12 | -10.49 | 11.26 | -25.98 | -0.64 | 2.90 | -7.80 | -11.26 | I3->I4 |
| Co_11_13 | 3.04 | -1.01 | -17.21 | 2.39 | 3.98 | -21.94 | -3.98 | I6->I7 |
| Co_11_14 | -11.39 | 12.33 | -29.81 | 2.29 | 5.12 | -9.30 | -12.33 | I3->I4 |
| Co_11_15 | 7.10 | -4.05 | -17.54 | 16.66 | -13.48 | -19.44 | -16.66 | I5->I6 |
| Co_11_16 | -13.34 | 5.86 | -20.94 | 5.69 | -2.82 | -5.19 | -5.86 | I3->I4 |
| Co_11_17 | -16.62 | 3.34 | -17.28 | -4.01 | 12.79 | -8.95 | -12.79 | I6->I7 |
| Co_11_18 | -11.49 | 14.58 | -26.98 | -3.04 | 3.02 | -6.83 | -14.58 | I3->I4 |
| Co_11_19 | -12.37 | 1.50 | -13.56 | 1.57 | 2.60 | -10.48 | -2.60 | I6->I7 |
| Co_11_20 | -13.92 | 8.93 | -22.33 | 7.91 | -5.47 | -5.86 | -8.93 | I3->I4 |
| Co_11_21 | -9.73 | 7.99 | -17.15 | -1.31 | -3.12 | -7.43 | -7.99 | I3->I4 |
| Co_11_22 | 2.87 | -6.60 | -20.04 | 1.35 | 4.46 | -12.79 | -4.46 | I6->I7 |
| Co_12_0 | -13.06 | 5.29 | -22.82 | -0.64 | 4.10 | -3.62 | -5.29 | I3->I4 |
| Co_12_1 | -10.04 | 5.19 | -20.05 | -2.57 | 5.64 | -8.91 | -5.64 | I6->I7 |
| Co_12_2 | -3.81 | 2.27 | -18.59 | 2.84 | -0.42 | -13.03 | -2.84 | I5->I6 |
| Co_12_3 | 4.00 | -2.68 | -22.77 | 2.93 | -0.50 | -11.72 | -4.00 | I2->I3 |
| Co_12_4 | -12.72 | 4.78 | -23.53 | 2.08 | 5.30 | -6.65 | -5.30 | I6->I7 |
| Co_12_5 | -12.12 | 9.78 | -19.92 | -1.75 | 1.25 | -7.98 | -9.78 | I3->I4 |
| Co_12_6 | -7.02 | 0.14 | -18.82 | -0.36 | 2.23 | -6.91 | -2.23 | I6->I7 |
| Co_12_7 | 15.52 | -0.02 | -16.51 | -11.10 | 10.37 | -29.00 | -15.52 | I2->I3 |
| Co_12_8 | -10.46 | 8.89 | -27.92 | 4.08 | 1.40 | -6.72 | -8.89 | I3->I4 |
| Co_12_9 | -9.98 | 2.50 | -21.75 | 3.88 | 2.32 | -7.72 | -3.88 | I5->I6 |
| Co_12_10 | -11.01 | 2.43 | -16.61 | 1.29 | 0.39 | -7.22 | -2.43 | I3->I4 |
| Co_12_11 | -11.12 | 10.32 | -22.50 | -5.42 | 5.28 | -7.30 | -10.32 | I3->I4 |
| Co_12_12 | -10.96 | 9.86 | -29.40 | 8.89 | -2.62 | -6.50 | -9.86 | I3->I4 |
| Co_12_13 | -1.69 | -4.51 | -4.38 | -10.58 | 6.07 | -15.64 | -6.07 | I6->I7 |
| Co_12_14 | -7.20 | -0.13 | -22.51 | 3.07 | 5.33 | -9.30 | -5.33 | I6->I7 |
| Co_12_15 | 8.11 | -6.26 | -11.88 | -12.98 | 11.74 | -19.48 | -11.74 | I6->I7 |
| Co_12_16 | -12.62 | 8.04 | -25.81 | 2.19 | 4.22 | -6.76 | -8.04 | I3->I4 |
| Co_12_17 | -13.16 | 6.00 | -18.39 | 5.90 | -7.60 | -3.49 | -6.00 | I3->I4 |
| Co_12_18 | -12.40 | -1.94 | -13.48 | 3.16 | -4.37 | -1.70 | -3.16 | I5->I6 |
| Co_12_19 | -17.11 | 9.38 | -27.58 | 10.96 | -4.07 | -2.31 | -10.96 | I5->I6 |
| Co_12_20 | -6.43 | -2.70 | -13.97 | 1.58 | 3.36 | -12.59 | -3.36 | I6->I7 |
| Co_12_21 | -11.08 | 2.12 | -17.65 | 5.68 | -0.13 | -9.68 | -5.68 | I5->I6 |
| Co_12_22 | 1.09 | -3.97 | -22.58 | -1.13 | 7.07 | -11.22 | -7.07 | I6->I7 |
| Co_13_0 | -4.06 | -3.94 | -17.23 | -2.32 | 3.40 | -6.59 | -3.40 | I6->I7 |
| Co_13_1 | -10.81 | 6.29 | -13.55 | -11.79 | 9.05 | -9.93 | -9.05 | I6->I7 |
| Co_13_2 | 3.76 | -3.66 | -23.09 | 0.36 | 4.28 | -12.38 | -4.28 | I6->I7 |
| Co_13_4 | -10.44 | 2.87 | -18.66 | 3.99 | 2.15 | -10.64 | -3.99 | I5->I6 |
| Co_13_5 | -11.94 | 0.05 | -5.87 | -9.93 | 8.69 | -11.74 | -8.69 | I6->I7 |
| Co_13_6 | -4.03 | 4.61 | -11.47 | -4.23 | 3.11 | -18.74 | -4.61 | I3->I4 |
| Co_13_8 | -10.09 | -1.73 | -17.03 | 0.37 | 5.44 | -7.70 | -5.44 | I6->I7 |
| Co_13_9 | -4.89 | 3.24 | -21.45 | 1.32 | 3.65 | -12.60 | -3.65 | I6->I7 |
| Co_13_10 | -1.41 | 0.68 | -16.66 | 1.96 | 1.82 | -17.14 | -1.96 | I5->I6 |
| Co_13_11 | -6.31 | 0.97 | -19.72 | 1.88 | 5.18 | -12.74 | -5.18 | I6->I7 |
| Co_13_12 | -3.82 | 0.99 | -22.24 | 0.26 | 7.87 | -13.80 | -7.87 | I6->I7 |
| Co_13_13 | 5.26 | -6.51 | -9.04 | -0.76 | 4.59 | -24.28 | -5.26 | I2->I3 |
| Co_13_14 | -0.61 | -0.68 | -19.07 | -3.55 | 5.96 | -12.79 | -5.96 | I6->I7 |
| Co_13_16 | -8.88 | 8.06 | -22.35 | -0.92 | 1.35 | -8.01 | -8.06 | I3->I4 |
| Co_13_17 | -13.31 | 4.59 | -11.88 | -9.89 | 9.53 | -9.78 | -9.53 | I6->I7 |
| Co_13_18 | -11.35 | 6.52 | -22.16 | 5.30 | -1.98 | -7.07 | -6.52 | I3->I4 |
| Co_13_19 | -9.34 | 11.57 | -22.82 | 1.70 | 0.55 | -12.40 | -11.57 | I3->I4 |
| Co_13_20 | -3.81 | 3.12 | -20.10 | 6.10 | -2.84 | -13.21 | -6.10 | I5->I6 |
| Co_13_21 | -6.68 | 1.14 | -13.73 | -6.20 | 4.72 | -9.99 | -4.72 | I6->I7 |
| Co_13_22 | 1.75 | -1.91 | -12.10 | -0.90 | -3.19 | -14.38 | -1.75 | I2->I3 |
| Co_14_0 | -13.53 | 6.03 | -24.09 | 4.61 | 1.37 | -5.12 | -6.03 | I3->I4 |
| Co_14_1 | -10.34 | 6.53 | -18.27 | -1.42 | -0.54 | -6.71 | -6.53 | I3->I4 |
| Co_14_2 | -8.30 | 6.82 | -22.91 | 1.65 | 6.82 | -14.82 | -6.82 | I3->I4 |
| Co_14_3 | -3.08 | 3.05 | -12.90 | -6.50 | 5.15 | -16.45 | -5.15 | I6->I7 |

| | | | | | | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|
| Co_14_4 | -11.83 | 5.59 | -20.36 | -0.73 | 5.05 | -8.47 | -5.59 | I3->I4 |
| Co_14_5 | -6.01 | 2.64 | -17.91 | -5.41 | 5.18 | -9.24 | -5.18 | I6->I7 |
| Co_14_6 | -9.83 | 2.83 | -17.30 | 4.33 | -3.56 | -7.21 | -4.33 | I5->I6 |
| Co_14_7 | 7.95 | 1.26 | -18.32 | -8.18 | 5.55 | -19.00 | -7.95 | I2->I3 |
| Co_14_8 | -9.35 | 9.19 | -28.06 | 7.52 | 1.81 | -11.84 | -9.19 | I3->I4 |
| Co_14_9 | -9.50 | 8.48 | -25.37 | 2.40 | 0.92 | -7.66 | -8.48 | I3->I4 |
| Co_14_10 | -9.03 | 2.06 | -22.93 | 8.55 | 1.70 | -11.09 | -8.55 | I5->I6 |
| Co_14_11 | -11.18 | 1.07 | -20.04 | 6.23 | 1.75 | -8.57 | -6.23 | I5->I6 |
| Co_14_12 | -8.35 | 7.76 | -27.43 | 7.09 | 0.36 | -10.16 | -7.76 | I3->I4 |
| Co_14_13 | 5.80 | -8.23 | -11.83 | 0.48 | -3.38 | -13.58 | -5.80 | I2->I3 |
| Co_14_14 | -10.05 | 9.62 | -24.11 | 0.80 | 1.00 | -8.01 | -9.62 | I3->I4 |
| Co_14_16 | -10.56 | 6.59 | -18.97 | -1.51 | 2.61 | -8.90 | -6.59 | I3->I4 |
| Co_14_17 | -12.76 | 4.40 | -19.52 | 1.48 | 4.84 | -9.17 | -4.84 | I6->I7 |
| Co_14_18 | -11.93 | 6.92 | -21.47 | 2.39 | -0.71 | -5.94 | -6.92 | I3->I4 |
| Co_14_19 | -13.69 | 9.73 | -23.16 | -1.01 | 2.69 | -5.29 | -9.73 | I3->I4 |
| Co_14_20 | -7.27 | 6.47 | -24.07 | 6.78 | -4.51 | -8.15 | -6.78 | I5->I6 |
| Co_14_21 | -10.93 | 8.15 | -23.72 | 2.51 | 2.83 | -9.59 | -8.15 | I3->I4 |
| Co_14_22 | -4.27 | 0.99 | -13.74 | -5.04 | 3.45 | -12.13 | -3.45 | I6->I7 |
| Co_15_0 | -15.15 | 4.46 | -21.40 | 2.70 | 6.51 | -7.86 | -6.51 | I6->I7 |
| Co_15_1 | -6.33 | 2.02 | -17.06 | -6.42 | 4.23 | -7.19 | -4.23 | I6->I7 |
| Co_15_2 | -10.40 | 11.05 | -21.03 | -6.14 | 1.50 | -5.71 | -11.05 | I3->I4 |
| Co_15_4 | -16.72 | 1.19 | -19.69 | 4.44 | -5.08 | 5.12 | -5.12 | I7->I2 |
| Co_15_5 | -3.44 | 4.62 | -18.93 | -0.89 | 8.19 | -20.30 | -8.19 | I6->I7 |
| Co_15_6 | 1.19 | -1.38 | -14.83 | 2.22 | 1.52 | -19.46 | -2.22 | I5->I6 |
| Co_15_8 | -7.87 | 4.92 | -23.53 | 7.36 | -2.50 | -9.12 | -7.36 | I5->I6 |
| Co_15_9 | -1.63 | -1.09 | -17.54 | -6.26 | 8.50 | -12.72 | -8.50 | I6->I7 |
| Co_15_10 | -7.98 | 3.97 | -15.69 | -1.64 | 1.54 | -10.93 | -3.97 | I3->I4 |
| Co_15_11 | -1.32 | -3.72 | -16.29 | 0.65 | 4.41 | -14.47 | -4.41 | I6->I7 |
| Co_15_12 | -4.69 | 3.93 | -11.11 | -5.51 | -0.50 | -12.86 | -3.93 | I3->I4 |
| Co_15_13 | 10.64 | -20.65 | -1.77 | -6.84 | 4.51 | -16.63 | -10.64 | I2->I3 |
| Co_15_16 | -14.54 | 11.73 | -22.48 | -2.11 | -0.56 | -2.77 | -11.73 | I3->I4 |
| Co_15_17 | -7.20 | 2.62 | -18.67 | 9.06 | -7.74 | -8.81 | -9.06 | I5->I6 |
| Co_15_18 | -10.20 | 3.48 | -19.23 | 9.14 | -3.86 | -10.07 | -9.14 | I5->I6 |
| Co_15_19 | -9.25 | 8.53 | -20.14 | 12.39 | -10.37 | -11.90 | -12.39 | I5->I6 |
| Co_15_20 | -2.38 | 3.45 | -24.67 | 4.25 | -4.02 | -7.38 | -4.25 | I5->I6 |
| Co_15_21 | -2.58 | -1.72 | -7.44 | -7.01 | 13.63 | -25.62 | -13.63 | I6->I7 |
| Co_15_22 | 10.98 | -9.75 | -15.44 | -1.78 | -0.24 | -14.50 | -10.98 | I2->I3 |
| Co_16_0 | -11.10 | 0.86 | -14.22 | -0.10 | -0.44 | -5.73 | -0.86 | I3->I4 |
| Co_16_1 | -4.32 | 6.57 | -20.46 | -5.75 | 0.03 | -6.81 | -6.57 | I3->I4 |
| Co_16_2 | -1.73 | 2.52 | -17.05 | -5.12 | 0.14 | -9.50 | -2.52 | I3->I4 |
| Co_16_3 | -1.01 | 5.19 | -17.33 | -1.48 | -0.09 | -16.02 | -5.19 | I3->I4 |
| Co_16_4 | -12.57 | 7.67 | -22.30 | 3.18 | -0.11 | -6.61 | -7.67 | I3->I4 |
| Co_16_5 | -8.77 | 4.87 | -27.15 | 6.70 | 1.21 | -7.61 | -6.70 | I5->I6 |
| Co_16_6 | -5.79 | 0.73 | -12.45 | 0.67 | -1.76 | -12.15 | -0.73 | I3->I4 |
| Co_16_7 | 14.68 | -8.28 | -7.62 | -13.14 | 2.05 | -18.44 | -14.68 | I2->I3 |
| Co_16_8 | -10.64 | 11.25 | -28.46 | 7.47 | -0.84 | -9.54 | -11.25 | I3->I4 |
| Co_16_9 | -6.29 | 3.24 | -18.79 | -3.59 | 6.24 | -11.56 | -6.24 | I6->I7 |
| Co_16_10 | -11.14 | 5.39 | -17.27 | -2.99 | 2.32 | -7.04 | -5.39 | I3->I4 |
| Co_16_11 | -9.12 | 6.76 | -25.47 | 6.84 | 1.81 | -11.56 | -6.84 | I5->I6 |
| Co_16_12 | -8.42 | 7.13 | -22.77 | 2.99 | -2.99 | -6.68 | -7.13 | I3->I4 |
| Co_16_13 | -1.50 | 0.64 | -12.07 | 0.74 | -1.32 | -17.24 | -0.74 | I5->I6 |
| Co_16_14 | -13.84 | 1.43 | -16.13 | 2.80 | -2.92 | -2.07 | -2.80 | I5->I6 |
| Co_16_16 | -15.88 | 9.94 | -23.74 | 1.82 | 6.28 | -9.17 | -9.94 | I3->I4 |
| Co_16_17 | -12.69 | 8.15 | -27.12 | 4.61 | 4.07 | -7.75 | -8.15 | I3->I4 |
| Co_16_18 | -14.75 | 13.58 | -21.68 | -2.70 | 1.71 | -6.89 | -13.58 | I3->I4 |
| Co_16_19 | -14.71 | 0.59 | -13.63 | 9.40 | -4.73 | -7.65 | -9.40 | I5->I6 |
| Co_16_20 | -15.55 | 10.82 | -23.53 | 4.87 | -1.39 | -5.96 | -10.82 | I3->I4 |
| Co_16_21 | -1.24 | -1.66 | -11.61 | 0.50 | 1.01 | -17.74 | -1.01 | I6->I7 |
| Co_16_22 | -2.38 | -0.14 | -18.01 | 2.21 | 1.50 | -13.93 | -2.21 | I5->I6 |
| Co_17_0 | -11.33 | 4.14 | -23.32 | 6.01 | -1.26 | -4.99 | -6.01 | I5->I6 |

| | | | | | | | | |
|----------|--------|-------|--------|--------|-------|--------|--------|--------|
| Co_17_1 | -9.11 | 1.87 | -18.30 | 2.47 | -3.82 | -3.86 | -2.47 | I5->I6 |
| Co_17_2 | -3.73 | 0.09 | -15.97 | -1.70 | 0.93 | -10.35 | -0.93 | I6->I7 |
| Co_17_3 | -7.30 | 2.09 | -11.91 | -7.16 | -1.03 | -5.43 | -2.09 | I3->I4 |
| Co_17_4 | -9.53 | 7.43 | -21.61 | -1.22 | 4.45 | -10.27 | -7.43 | I3->I4 |
| Co_17_5 | -9.77 | -2.45 | -10.70 | -8.67 | 7.24 | -6.38 | -7.24 | I6->I7 |
| Co_17_6 | -5.58 | -2.67 | -21.50 | 3.67 | 6.40 | -11.06 | -6.40 | I6->I7 |
| Co_17_7 | 13.83 | -5.70 | -10.96 | -3.65 | -4.05 | -20.21 | -13.83 | I2->I3 |
| Co_17_8 | -7.12 | -0.11 | -21.41 | 10.24 | -4.83 | -7.50 | -10.24 | I5->I6 |
| Co_17_9 | -11.23 | 1.33 | -16.15 | 2.49 | -3.38 | -3.79 | -2.49 | I5->I6 |
| Co_17_10 | -9.50 | 1.64 | -18.48 | 0.99 | 3.38 | -8.77 | -3.38 | I6->I7 |
| Co_17_11 | -10.51 | 2.56 | -19.82 | 3.64 | 0.78 | -7.39 | -3.64 | I5->I6 |
| Co_17_12 | -11.16 | 8.58 | -26.63 | 6.06 | -3.80 | -3.79 | -8.58 | I3->I4 |
| Co_17_13 | -2.62 | 3.14 | -14.90 | -4.59 | 6.70 | -18.48 | -6.70 | I6->I7 |
| Co_17_14 | -10.49 | 4.82 | -19.10 | 1.15 | 3.84 | -10.96 | -4.82 | I3->I4 |
| Co_17_15 | 1.38 | -4.50 | -14.56 | -4.67 | 12.63 | -21.03 | -12.63 | I6->I7 |
| Co_17_16 | -12.80 | 5.48 | -20.45 | 6.79 | 0.06 | -9.81 | -6.79 | I5->I6 |
| Co_17_17 | -18.89 | 9.36 | -25.36 | 1.26 | 11.06 | -8.16 | -11.06 | I6->I7 |
| Co_17_18 | -18.27 | 6.35 | -25.60 | 11.30 | 1.46 | -5.98 | -11.30 | I5->I6 |
| Co_17_19 | -15.57 | 11.95 | -27.69 | 10.16 | -1.41 | -8.17 | -11.95 | I3->I4 |
| Co_17_20 | -13.41 | 7.17 | -16.65 | 5.43 | -4.74 | -8.54 | -7.17 | I3->I4 |
| Co_17_21 | -3.06 | 2.67 | -16.22 | -4.16 | -1.19 | -8.78 | -2.67 | I3->I4 |
| Co_17_22 | -1.34 | 0.47 | -2.77 | -15.26 | 0.12 | -11.96 | -0.47 | I3->I4 |
| Co_18_0 | -8.76 | 5.18 | -19.85 | -4.79 | 3.40 | -5.92 | -5.18 | I3->I4 |
| Co_18_1 | -5.94 | 5.02 | -18.37 | 0.82 | -2.61 | -9.65 | -5.02 | I3->I4 |
| Co_18_2 | 0.71 | -6.71 | -11.49 | -4.35 | 0.60 | -9.50 | -0.71 | I2->I3 |
| Co_18_3 | 2.23 | 1.20 | -12.91 | -3.37 | -4.45 | -13.45 | -2.23 | I2->I3 |
| Co_18_4 | -13.72 | 10.56 | -22.70 | 7.40 | -2.85 | -9.43 | -10.56 | I3->I4 |
| Co_18_5 | -6.19 | -1.75 | -15.77 | 0.56 | -0.27 | -7.32 | -0.56 | I5->I6 |
| Co_18_6 | -7.56 | 4.09 | -20.85 | 0.30 | 3.76 | -10.48 | -4.09 | I3->I4 |
| Co_18_7 | 11.82 | 4.61 | -22.56 | -5.50 | 3.53 | -22.65 | -11.82 | I2->I3 |
| Co_18_8 | -8.27 | -1.28 | -18.71 | 5.07 | -3.54 | -4.02 | -5.07 | I5->I6 |
| Co_18_9 | -10.21 | -0.57 | -15.97 | -0.37 | 0.75 | -4.37 | -0.75 | I6->I7 |
| Co_18_10 | -12.60 | 10.71 | -28.06 | 5.22 | -2.09 | -3.92 | -10.71 | I3->I4 |
| Co_18_11 | -8.47 | 1.39 | -17.66 | 4.23 | -0.90 | -9.34 | -4.23 | I5->I6 |
| Co_18_12 | -7.41 | -1.22 | -20.53 | 4.08 | 2.74 | -8.41 | -4.08 | I5->I6 |
| Co_18_13 | -3.68 | 7.11 | -9.52 | -9.61 | -4.51 | -10.53 | -7.11 | I3->I4 |
| Co_18_14 | -12.39 | 8.58 | -18.83 | 2.13 | -4.07 | -6.16 | -8.58 | I3->I4 |
| Co_18_15 | -2.09 | -8.55 | -14.50 | 1.13 | 12.29 | -19.01 | -12.29 | I6->I7 |
| Co_18_16 | -15.09 | 3.26 | -18.53 | 7.17 | -2.20 | -5.35 | -7.17 | I5->I6 |
| Co_18_17 | -13.61 | -0.18 | -16.27 | -0.94 | 10.04 | -9.77 | -10.04 | I6->I7 |
| Co_18_18 | -17.20 | 12.65 | -26.63 | 2.41 | 2.32 | -4.28 | -12.65 | I3->I4 |
| Co_18_19 | -17.38 | 11.44 | -19.20 | -4.62 | 4.53 | -5.50 | -11.44 | I3->I4 |
| Co_18_20 | -9.74 | 15.63 | -28.11 | 3.03 | 0.50 | -12.06 | -15.63 | I3->I4 |
| Co_18_21 | -7.13 | 2.78 | -14.50 | -5.76 | 3.15 | -9.28 | -3.15 | I6->I7 |
| Co_18_22 | -1.64 | 5.24 | -16.91 | -3.73 | 2.22 | -15.92 | -5.24 | I3->I4 |
| Co_19_0 | -13.74 | 3.33 | -23.76 | 8.66 | -5.11 | -0.11 | -8.66 | I5->I6 |
| Co_19_1 | -4.15 | -0.99 | -15.18 | 1.65 | -3.85 | -8.22 | -1.65 | I5->I6 |
| Co_19_2 | 1.03 | -0.55 | -19.01 | -3.31 | 0.86 | -9.76 | -1.03 | I2->I3 |
| Co_19_3 | -1.46 | -0.17 | -14.79 | -2.69 | 3.01 | -14.64 | -3.01 | I6->I7 |
| Co_19_4 | -10.57 | 7.38 | -24.71 | 4.16 | 1.79 | -8.79 | -7.38 | I3->I4 |
| Co_19_5 | -6.63 | 5.03 | -22.94 | 1.88 | 0.46 | -8.54 | -5.03 | I3->I4 |
| Co_19_6 | -3.00 | -0.23 | -23.50 | 2.12 | 3.85 | -9.97 | -3.85 | I6->I7 |
| Co_19_8 | -10.64 | 7.84 | -25.26 | 5.89 | -1.44 | -7.13 | -7.84 | I3->I4 |
| Co_19_9 | -8.87 | 9.85 | -28.33 | 7.49 | -5.55 | -5.32 | -9.85 | I3->I4 |
| Co_19_10 | -8.27 | -0.37 | -10.99 | -4.39 | 2.16 | -8.87 | -2.16 | I6->I7 |
| Co_19_11 | -8.27 | 6.12 | -22.00 | 5.31 | 0.24 | -12.14 | -6.12 | I3->I4 |
| Co_19_12 | -9.47 | 5.77 | -23.52 | 7.32 | 0.95 | -11.79 | -7.32 | I5->I6 |
| Co_19_13 | -5.91 | 3.43 | -17.27 | -1.83 | -1.91 | -7.24 | -3.43 | I3->I4 |
| Co_19_14 | -10.44 | 2.06 | -18.88 | 1.73 | -1.34 | -3.88 | -2.06 | I3->I4 |
| Co_19_15 | -1.22 | 1.10 | -18.34 | -1.51 | 1.43 | -12.20 | -1.43 | I6->I7 |

| | | | | | | | | |
|----------|--------|-------|--------|--------|--------|--------|--------|--------|
| Co_19_16 | -13.74 | 8.47 | -26.01 | 0.80 | 4.35 | -4.61 | -8.47 | I3->I4 |
| Co_19_17 | -14.20 | -0.71 | -18.84 | 10.30 | -0.67 | -6.63 | -10.30 | I5->I6 |
| Co_19_18 | -10.38 | 7.93 | -24.57 | 4.73 | -0.04 | -8.42 | -7.93 | I3->I4 |
| Co_19_19 | -17.43 | 9.07 | -20.26 | -0.69 | 9.78 | -11.21 | -9.78 | I6->I7 |
| Co_19_20 | -11.88 | 5.82 | -25.06 | 11.64 | -5.64 | -5.62 | -11.64 | I5->I6 |
| Co_19_21 | -10.04 | 2.07 | -17.89 | 0.68 | 1.80 | -7.36 | -2.07 | I3->I4 |
| Co_19_22 | -2.04 | 0.21 | -13.04 | -5.46 | 8.63 | -19.04 | -8.63 | I6->I7 |
| Co_20_0 | -10.33 | 4.65 | -19.80 | 1.53 | -0.33 | -6.46 | -4.65 | I3->I4 |
| Co_20_1 | -7.41 | 3.75 | -22.51 | 0.53 | 1.13 | -6.24 | -3.75 | I3->I4 |
| Co_20_2 | -1.36 | -4.94 | -15.72 | 0.38 | 9.24 | -18.34 | -9.24 | I6->I7 |
| Co_20_3 | -0.70 | 1.77 | -8.91 | -6.81 | -0.94 | -15.16 | -1.77 | I3->I4 |
| Co_20_4 | -11.71 | 8.56 | -29.67 | -0.11 | 6.36 | -4.17 | -8.56 | I3->I4 |
| Co_20_5 | -6.79 | -4.82 | -14.61 | -0.85 | 9.47 | -13.15 | -9.47 | I6->I7 |
| Co_20_6 | -8.87 | 5.02 | -14.25 | -5.48 | 2.06 | -9.22 | -5.02 | I3->I4 |
| Co_20_7 | 6.23 | -3.95 | -7.93 | -2.83 | -3.37 | -18.88 | -6.23 | I2->I3 |
| Co_20_8 | -8.88 | 0.77 | -21.03 | 6.35 | 0.25 | -8.19 | -6.35 | I5->I6 |
| Co_20_9 | -8.08 | 5.74 | -22.89 | 2.37 | -1.77 | -6.11 | -5.74 | I3->I4 |
| Co_20_10 | -8.48 | 10.97 | -29.60 | 5.62 | -5.36 | -3.90 | -10.97 | I3->I4 |
| Co_20_11 | -10.85 | 8.33 | -23.16 | 1.47 | 0.24 | -6.78 | -8.33 | I3->I4 |
| Co_20_12 | -11.47 | 2.31 | -13.64 | -4.54 | 3.16 | -6.57 | -3.16 | I6->I7 |
| Co_20_13 | -7.55 | 3.23 | -17.43 | 0.26 | 2.90 | -12.15 | -3.23 | I3->I4 |
| Co_20_14 | -10.31 | 5.04 | -22.48 | 10.19 | -11.11 | -2.08 | -10.19 | I5->I6 |
| Co_20_15 | 4.96 | 5.34 | -13.19 | -7.92 | -2.90 | -17.04 | -5.34 | I3->I4 |
| Co_20_16 | -15.11 | 8.66 | -22.95 | 4.19 | -0.12 | -5.41 | -8.66 | I3->I4 |
| Co_20_17 | -14.29 | 9.24 | -23.60 | 7.64 | -1.74 | -7.99 | -9.24 | I3->I4 |
| Co_20_18 | -10.89 | 3.40 | -21.80 | -2.42 | 14.65 | -13.67 | -14.65 | I6->I7 |
| Co_20_19 | -14.36 | 1.60 | -14.72 | 8.25 | -3.71 | -7.78 | -8.25 | I5->I6 |
| Co_20_20 | -4.29 | 0.95 | -21.05 | 10.11 | -5.30 | -11.17 | -10.11 | I5->I6 |
| Co_20_21 | -7.69 | 2.72 | -14.09 | -6.60 | 3.43 | -8.51 | -3.43 | I6->I7 |
| Co_21_0 | -12.16 | 5.08 | -18.93 | -0.36 | -1.25 | -3.13 | -5.08 | I3->I4 |
| Co_21_1 | -8.68 | 5.27 | -17.62 | 0.05 | -5.49 | -4.28 | -5.27 | I3->I4 |
| Co_21_2 | 0.72 | -5.47 | -19.42 | 4.41 | -0.14 | -10.85 | -4.41 | I5->I6 |
| Co_21_3 | 2.93 | -4.76 | -12.97 | -6.49 | 3.41 | -12.86 | -3.41 | I6->I7 |
| Co_21_4 | -8.14 | 2.61 | -16.91 | -2.69 | -1.03 | -4.57 | -2.61 | I3->I4 |
| Co_21_5 | -10.38 | 2.15 | -16.35 | 2.99 | -4.24 | -4.93 | -2.99 | I5->I6 |
| Co_21_6 | -5.26 | 8.29 | -27.25 | 11.75 | -12.83 | -5.44 | -11.75 | I5->I6 |
| Co_21_8 | -7.20 | 4.76 | -23.79 | 3.02 | 1.46 | -9.00 | -4.76 | I3->I4 |
| Co_21_9 | -8.44 | 1.40 | -19.24 | -0.95 | 3.40 | -6.93 | -3.40 | I6->I7 |
| Co_21_10 | -6.58 | 2.84 | -27.47 | -1.21 | 7.60 | -5.93 | -7.60 | I6->I7 |
| Co_21_11 | -9.76 | 7.08 | -20.44 | -5.43 | 6.52 | -8.72 | -7.08 | I3->I4 |
| Co_21_12 | -8.41 | 2.96 | -19.69 | -1.98 | 3.73 | -7.36 | -3.73 | I6->I7 |
| Co_21_13 | 0.19 | 0.55 | -14.97 | -1.15 | 2.95 | -18.31 | -2.95 | I6->I7 |
| Co_21_14 | -13.32 | 4.60 | -24.00 | 4.63 | -2.81 | 0.16 | -4.63 | I5->I6 |
| Co_21_15 | 11.93 | -3.52 | -18.62 | -16.48 | 22.23 | -26.28 | -22.23 | I6->I7 |
| Co_21_16 | -15.60 | 9.91 | -27.59 | 0.07 | 8.38 | -5.92 | -9.91 | I3->I4 |
| Co_21_17 | -14.27 | 8.94 | -22.49 | -1.34 | 3.69 | -5.27 | -8.94 | I3->I4 |
| Co_21_18 | -10.17 | 8.84 | -22.63 | 1.94 | 4.03 | -12.74 | -8.84 | I3->I4 |
| Co_21_19 | -11.36 | 4.89 | -10.41 | -3.33 | -4.01 | -6.53 | -4.89 | I3->I4 |
| Co_21_20 | -7.90 | 3.75 | -14.56 | -2.84 | 2.80 | -11.98 | -3.75 | I3->I4 |
| Co_21_21 | 1.46 | -3.94 | -13.78 | -2.96 | -3.62 | -7.91 | -1.46 | I2->I3 |
| Co_21_22 | 1.13 | 0.67 | -13.77 | -8.71 | 5.32 | -15.38 | -5.32 | I6->I7 |
| Co_22_0 | -6.73 | -0.67 | -23.01 | 4.55 | 0.57 | -5.45 | -4.55 | I5->I6 |
| Co_22_1 | -3.43 | 2.31 | -10.78 | -12.38 | 2.14 | -8.61 | -2.31 | I3->I4 |
| Co_22_2 | 7.36 | -5.30 | -11.67 | -11.97 | 4.50 | -13.66 | -7.36 | I2->I3 |
| Co_22_3 | 0.28 | 1.50 | -16.75 | -2.97 | -2.34 | -10.45 | -1.50 | I3->I4 |
| Co_22_4 | -10.21 | 2.62 | -19.65 | 4.65 | -4.59 | -3.58 | -4.65 | I5->I6 |
| Co_22_5 | -5.63 | 4.24 | -24.57 | 7.53 | -6.71 | -5.60 | -7.53 | I5->I6 |
| Co_22_6 | -6.53 | 5.55 | -21.53 | 5.16 | -5.13 | -8.25 | -5.55 | I3->I4 |
| Co_22_8 | -9.56 | 7.72 | -22.03 | -1.25 | -0.55 | -5.07 | -7.72 | I3->I4 |
| Co_22_9 | -9.81 | 4.50 | -22.68 | 2.01 | 3.56 | -8.32 | -4.50 | I3->I4 |

| | | | | | | | | |
|----------|--------|--------|--------|--------|-------|--------|--------|--------|
| Co_22_10 | -8.14 | 4.14 | -21.46 | 1.59 | 2.00 | -8.88 | -4.14 | I3->I4 |
| Co_22_11 | -4.22 | 0.25 | -16.98 | -1.93 | 5.01 | -12.87 | -5.01 | I6->I7 |
| Co_22_12 | -7.71 | 2.76 | -20.53 | -4.26 | 6.14 | -7.14 | -6.14 | I6->I7 |
| Co_22_13 | 1.90 | -4.30 | -4.40 | -10.94 | 11.46 | -24.46 | -11.46 | I6->I7 |
| Co_22_14 | -10.32 | 6.07 | -18.34 | -7.51 | 7.01 | -7.65 | -7.01 | I6->I7 |
| Co_22_16 | -9.36 | 0.18 | -19.71 | 3.05 | 6.15 | -11.04 | -6.15 | I6->I7 |
| Co_22_17 | -9.64 | 10.05 | -23.64 | 5.04 | -2.56 | -9.99 | -10.05 | I3->I4 |
| Co_22_18 | -8.32 | 3.16 | -11.96 | -3.42 | -1.26 | -8.94 | -3.16 | I3->I4 |
| Co_22_19 | -13.49 | 12.02 | -28.98 | 6.32 | -1.36 | -5.26 | -12.02 | I3->I4 |
| Co_22_20 | -9.32 | 10.50 | -22.89 | -5.56 | 4.82 | -8.29 | -10.50 | I3->I4 |
| Co_22_21 | 2.99 | -8.23 | -18.69 | -0.04 | 5.29 | -12.06 | -5.29 | I6->I7 |
| Co_22_22 | -1.04 | -1.74 | -9.60 | -2.89 | -0.14 | -15.32 | 0.14 | I6->I7 |
| Rh_0_0 | -1.74 | -4.53 | -10.22 | -7.20 | 2.96 | -10.01 | -2.96 | I6->I7 |
| Rh_0_1 | -0.08 | -5.10 | -10.33 | -7.23 | 6.62 | -14.62 | -6.62 | I6->I7 |
| Rh_0_2 | -1.38 | -4.34 | -8.43 | -11.64 | 6.75 | -11.69 | -6.75 | I6->I7 |
| Rh_0_3 | 4.65 | -9.99 | 0.04 | -13.86 | 6.26 | -17.84 | -6.26 | I6->I7 |
| Rh_0_4 | -1.13 | -4.48 | -11.84 | -3.20 | 2.77 | -12.87 | -2.77 | I6->I7 |
| Rh_0_5 | 0.60 | -4.40 | -6.35 | -7.27 | 1.38 | -14.70 | -1.38 | I6->I7 |
| Rh_0_6 | 3.79 | -5.65 | -17.12 | -2.94 | 1.14 | -9.95 | -3.79 | I2->I3 |
| Rh_0_7 | 7.91 | -11.71 | -3.42 | -9.04 | 2.89 | -17.36 | -7.91 | I2->I3 |
| Rh_0_8 | -2.17 | -3.92 | -9.59 | -6.47 | 5.51 | -14.11 | -5.51 | I6->I7 |
| Rh_0_9 | -4.31 | -4.59 | -9.99 | -8.32 | 7.51 | -11.04 | -7.51 | I6->I7 |
| Rh_0_10 | -3.07 | -3.39 | -10.08 | -7.11 | 6.83 | -13.92 | -6.83 | I6->I7 |
| Rh_0_11 | -4.48 | -3.54 | -13.37 | -3.31 | 4.69 | -10.72 | -4.69 | I6->I7 |
| Rh_0_12 | -1.69 | -4.96 | -7.39 | -7.81 | 5.93 | -14.82 | -5.93 | I6->I7 |
| Rh_0_13 | 1.94 | -8.82 | -3.93 | -10.32 | 11.65 | -21.27 | -11.65 | I6->I7 |
| Rh_0_14 | -2.50 | -3.86 | -10.88 | -6.11 | 5.33 | -12.72 | -5.33 | I6->I7 |
| Rh_0_15 | 4.30 | -14.04 | 0.75 | -17.02 | 10.28 | -15.01 | -10.28 | I6->I7 |
| Rh_0_16 | -1.55 | -2.90 | -8.59 | -12.48 | 8.88 | -14.11 | -8.88 | I6->I7 |
| Rh_0_17 | -3.09 | 1.36 | -13.55 | -6.20 | 11.41 | -20.67 | -11.41 | I6->I7 |
| Rh_0_18 | -0.12 | -0.37 | -10.69 | -8.42 | 5.03 | -16.17 | -5.03 | I6->I7 |
| Rh_0_19 | -0.09 | -4.30 | -11.80 | -7.10 | 9.02 | -16.47 | -9.02 | I6->I7 |
| Rh_0_20 | -3.47 | 1.19 | -5.58 | -11.96 | 7.31 | -18.23 | -7.31 | I6->I7 |
| Rh_0_21 | 3.86 | -11.42 | -5.56 | -11.34 | 9.88 | -16.15 | -9.88 | I6->I7 |
| Rh_0_22 | 7.94 | -11.78 | -3.43 | -12.48 | 4.54 | -15.53 | -7.94 | I2->I3 |
| Rh_1_0 | -0.90 | -4.13 | -11.52 | -7.76 | 4.67 | -11.10 | -4.67 | I6->I7 |
| Rh_1_1 | 5.15 | -9.18 | -9.63 | -8.42 | 4.86 | -13.53 | -5.15 | I2->I3 |
| Rh_1_2 | 1.68 | -3.31 | -8.34 | -10.03 | 3.66 | -14.40 | -3.66 | I6->I7 |
| Rh_1_3 | 6.25 | -9.53 | -5.25 | -10.54 | 7.79 | -19.45 | -7.79 | I6->I7 |
| Rh_1_4 | -0.83 | -5.16 | -11.73 | -5.66 | 5.41 | -12.77 | -5.41 | I6->I7 |
| Rh_1_5 | 0.33 | -1.04 | -8.42 | -8.20 | -0.07 | -13.34 | -0.33 | I2->I3 |
| Rh_1_6 | 8.10 | -5.36 | -12.46 | -5.95 | -1.95 | -13.11 | -8.10 | I2->I3 |
| Rh_1_7 | 19.47 | -10.95 | -0.86 | -13.52 | -2.51 | -22.37 | -19.47 | I2->I3 |
| Rh_1_8 | -1.88 | -5.67 | -7.51 | -8.76 | 7.81 | -14.72 | -7.81 | I6->I7 |
| Rh_1_9 | -3.13 | -3.47 | -6.21 | -9.60 | 7.63 | -15.96 | -7.63 | I6->I7 |
| Rh_1_10 | -1.71 | -5.50 | -9.31 | -5.74 | 6.21 | -14.68 | -6.21 | I6->I7 |
| Rh_1_11 | -1.26 | -4.35 | -10.52 | -2.91 | 1.11 | -12.81 | -1.11 | I6->I7 |
| Rh_1_12 | -0.77 | -3.68 | -10.61 | -8.16 | 5.89 | -13.41 | -5.89 | I6->I7 |
| Rh_1_13 | 11.23 | -13.58 | -2.62 | -15.43 | 24.03 | -34.38 | -24.03 | I6->I7 |
| Rh_1_14 | -0.83 | -4.44 | -9.71 | -6.95 | 7.56 | -16.37 | -7.56 | I6->I7 |
| Rh_1_16 | -1.93 | -5.22 | -4.10 | -14.89 | 9.52 | -14.12 | -9.52 | I6->I7 |
| Rh_1_17 | 2.49 | -7.62 | -4.44 | -5.45 | 6.81 | -22.53 | -6.81 | I6->I7 |
| Rh_1_18 | 3.84 | -4.56 | -8.66 | -1.61 | 0.74 | -20.48 | -3.84 | I2->I3 |
| Rh_1_19 | -2.21 | -4.12 | -7.10 | -5.12 | 2.86 | -15.05 | -2.86 | I6->I7 |
| Rh_1_20 | 2.67 | -9.22 | -3.11 | -14.14 | 13.01 | -19.94 | -13.01 | I6->I7 |
| Rh_1_21 | 2.05 | -4.61 | -8.05 | -10.87 | 9.67 | -18.93 | -9.67 | I6->I7 |
| Rh_1_22 | 9.54 | -13.62 | -4.53 | -8.07 | 6.14 | -20.20 | -9.54 | I2->I3 |
| Rh_2_0 | 0.58 | -6.68 | -6.68 | -8.86 | 3.43 | -12.53 | -3.43 | I6->I7 |
| Rh_2_1 | 6.35 | -11.54 | -5.54 | -14.31 | 9.08 | -14.78 | -9.08 | I6->I7 |
| Rh_2_2 | 3.60 | -4.65 | -7.05 | -9.75 | 6.05 | -18.94 | -6.05 | I6->I7 |

| | | | | | | | | |
|---------|-------|--------|--------|--------|-------|--------|--------|--------|
| Rh_2_3 | 0.78 | -5.96 | -3.80 | -9.58 | 3.50 | -15.68 | -3.50 | I6->I7 |
| Rh_2_4 | -3.07 | -3.57 | -3.17 | -10.66 | 8.08 | -18.35 | -8.08 | I6->I7 |
| Rh_2_5 | 4.34 | -10.89 | 0.90 | -16.15 | 9.43 | -18.36 | -9.43 | I6->I7 |
| Rh_2_6 | 5.63 | -6.79 | -9.38 | -5.23 | 0.80 | -15.75 | -5.63 | I2->I3 |
| Rh_2_7 | 11.72 | -9.34 | -5.10 | 1.73 | -3.08 | -26.69 | -11.72 | I2->I3 |
| Rh_2_8 | 2.11 | -7.60 | -5.83 | -11.16 | 3.86 | -12.12 | -3.86 | I6->I7 |
| Rh_2_9 | 1.89 | -6.77 | -10.70 | -10.60 | 6.66 | -11.22 | -6.66 | I6->I7 |
| Rh_2_10 | -1.46 | -5.86 | -9.57 | -4.63 | 9.13 | -18.35 | -9.13 | I6->I7 |
| Rh_2_11 | -0.10 | -5.35 | -11.58 | -4.53 | 10.07 | -19.25 | -10.07 | I6->I7 |
| Rh_2_12 | -0.41 | -5.86 | -7.56 | -9.57 | 8.20 | -15.54 | -8.20 | I6->I7 |
| Rh_2_13 | 7.42 | -9.34 | -7.80 | -4.33 | 9.08 | -25.77 | -9.08 | I6->I7 |
| Rh_2_14 | -3.32 | 0.25 | -10.16 | -11.70 | 18.54 | -24.35 | -18.54 | I6->I7 |
| Rh_2_16 | 0.09 | -0.61 | -12.25 | -8.53 | 13.42 | -22.86 | -13.42 | I6->I7 |
| Rh_2_17 | -3.99 | 0.31 | -7.09 | -8.70 | 2.29 | -13.55 | -2.29 | I6->I7 |
| Rh_2_18 | -0.92 | -1.97 | -3.70 | -14.72 | 8.59 | -18.02 | -8.59 | I6->I7 |
| Rh_2_19 | 1.21 | -3.13 | -4.09 | -12.88 | 13.89 | -25.75 | -13.89 | I6->I7 |
| Rh_2_20 | 5.39 | -10.15 | 1.26 | -14.84 | 6.34 | -18.74 | -6.34 | I6->I7 |
| Rh_2_21 | 4.97 | -6.21 | 4.45 | -22.38 | 10.65 | -22.22 | -10.65 | I6->I7 |
| Rh_2_22 | 2.05 | -3.91 | -3.42 | -10.74 | 12.44 | -27.14 | -12.44 | I6->I7 |
| Rh_3_0 | -0.72 | -4.75 | -6.64 | -11.76 | 3.31 | -10.18 | -3.31 | I6->I7 |
| Rh_3_1 | 3.51 | -6.97 | -8.01 | -11.82 | 7.69 | -15.13 | -7.69 | I6->I7 |
| Rh_3_2 | 5.71 | -7.62 | -8.74 | -9.43 | 4.57 | -15.23 | -5.71 | I2->I3 |
| Rh_3_3 | 5.98 | -6.41 | -3.74 | -13.71 | 3.12 | -15.98 | -5.98 | I2->I3 |
| Rh_3_4 | 0.26 | -3.94 | -12.08 | -3.61 | 3.33 | -14.70 | -3.33 | I6->I7 |
| Rh_3_5 | 5.69 | -7.68 | -9.80 | -7.45 | 2.55 | -14.04 | -5.69 | I2->I3 |
| Rh_3_6 | 2.90 | -0.56 | -12.46 | -6.64 | -1.50 | -12.48 | -2.90 | I2->I3 |
| Rh_3_8 | 0.93 | 1.36 | -13.08 | -5.88 | 3.44 | -17.50 | -3.44 | I6->I7 |
| Rh_3_9 | 4.65 | -10.81 | -9.04 | -4.90 | 4.44 | -15.08 | -4.65 | I2->I3 |
| Rh_3_10 | 3.08 | -4.38 | -9.87 | -11.70 | 8.30 | -16.17 | -8.30 | I6->I7 |
| Rh_3_11 | -0.44 | -4.30 | -8.39 | -5.66 | 6.18 | -18.14 | -6.18 | I6->I7 |
| Rh_3_12 | 3.32 | -6.38 | -6.36 | -6.65 | 7.23 | -21.90 | -7.23 | I6->I7 |
| Rh_3_13 | 10.10 | -8.64 | -0.77 | -7.71 | 7.05 | -30.77 | -10.10 | I2->I3 |
| Rh_3_14 | 1.62 | -6.52 | -8.81 | -9.42 | 12.23 | -19.84 | -12.23 | I6->I7 |
| Rh_3_16 | 0.27 | -1.65 | -13.41 | -4.46 | 0.94 | -12.42 | -0.94 | I6->I7 |
| Rh_3_17 | 1.25 | -0.39 | -13.53 | -3.70 | 3.38 | -17.74 | -3.38 | I6->I7 |
| Rh_3_18 | 0.93 | -1.73 | -6.07 | -12.78 | 3.38 | -14.47 | -3.38 | I6->I7 |
| Rh_3_19 | 0.53 | -1.61 | -9.40 | -11.43 | 10.77 | -19.60 | -10.77 | I6->I7 |
| Rh_3_20 | 3.71 | -3.21 | -0.56 | -10.85 | 2.79 | -22.61 | -3.71 | I2->I3 |
| Rh_3_21 | 9.56 | -17.39 | 3.33 | -11.00 | 6.84 | -22.07 | -9.56 | I2->I3 |
| Rh_3_22 | 8.36 | -2.30 | -2.53 | -17.25 | 4.24 | -21.25 | -8.36 | I2->I3 |
| Rh_4_0 | -3.86 | -2.07 | -10.71 | -7.84 | 3.43 | -9.68 | -3.43 | I6->I7 |
| Rh_4_1 | 3.21 | -7.97 | -8.83 | -6.74 | 2.54 | -12.94 | -3.21 | I2->I3 |
| Rh_4_2 | -2.43 | -1.42 | -8.41 | -15.29 | 6.46 | -9.63 | -6.46 | I6->I7 |
| Rh_4_3 | 0.05 | -2.05 | -6.13 | -10.69 | 4.01 | -15.93 | -4.01 | I6->I7 |
| Rh_4_4 | -2.06 | -3.72 | -6.95 | -7.45 | 4.89 | -15.45 | -4.89 | I6->I7 |
| Rh_4_5 | 0.41 | -7.97 | -8.37 | -7.32 | 5.26 | -12.74 | -5.26 | I6->I7 |
| Rh_4_6 | -1.61 | 0.00 | -13.86 | -7.36 | 7.46 | -15.37 | -7.46 | I6->I7 |
| Rh_4_7 | 11.99 | -14.66 | -2.49 | -12.83 | 7.92 | -20.67 | -11.99 | I2->I3 |
| Rh_4_8 | -4.36 | -2.65 | -7.00 | -7.90 | 2.02 | -10.84 | -2.02 | I6->I7 |
| Rh_4_9 | -3.68 | -0.92 | -7.29 | -11.25 | 5.05 | -12.64 | -5.05 | I6->I7 |
| Rh_4_10 | -2.13 | -5.06 | -7.21 | -6.98 | 2.17 | -11.54 | -2.17 | I6->I7 |
| Rh_4_11 | -3.07 | -4.66 | -8.26 | -2.76 | 6.04 | -18.01 | -6.04 | I6->I7 |
| Rh_4_12 | -3.96 | -3.54 | -8.97 | -7.67 | 5.37 | -11.96 | -5.37 | I6->I7 |
| Rh_4_13 | 5.15 | -10.60 | 5.60 | -23.39 | 14.36 | -21.86 | -14.36 | I6->I7 |
| Rh_4_14 | -1.51 | -1.67 | -12.37 | -5.79 | 4.38 | -13.77 | -4.38 | I6->I7 |
| Rh_4_16 | -4.51 | -3.31 | -11.50 | 0.21 | 2.18 | -13.81 | -2.18 | I6->I7 |
| Rh_4_17 | -7.26 | -1.81 | -9.77 | -3.99 | 6.38 | -14.29 | -6.38 | I6->I7 |
| Rh_4_18 | -3.64 | -1.03 | -13.17 | -2.65 | 7.02 | -17.27 | -7.02 | I6->I7 |
| Rh_4_19 | -2.49 | -4.12 | -12.74 | 0.62 | 5.74 | -17.76 | -5.74 | I6->I7 |
| Rh_4_20 | -2.13 | 3.10 | -11.30 | -10.33 | 10.88 | -20.96 | -10.88 | I6->I7 |

| | | | | | | | | |
|---------|-------|--------|--------|--------|-------|--------|--------|--------|
| Rh_4_21 | 0.88 | -7.05 | -4.44 | -5.92 | 0.03 | -14.24 | -0.88 | I2->I3 |
| Rh_4_22 | 9.77 | -7.06 | -1.74 | -17.50 | 9.55 | -23.75 | -9.77 | I2->I3 |
| Rh_5_0 | -2.93 | -3.36 | -11.92 | -6.85 | 2.88 | -8.57 | -2.88 | I6->I7 |
| Rh_5_1 | 0.19 | -7.30 | -3.83 | -15.51 | 5.05 | -9.34 | -5.05 | I6->I7 |
| Rh_5_2 | 4.04 | -8.12 | -4.40 | -12.58 | 3.65 | -13.32 | -4.04 | I2->I3 |
| Rh_5_3 | 6.28 | -9.26 | -1.04 | -18.00 | 3.92 | -12.65 | -6.28 | I2->I3 |
| Rh_5_4 | -2.02 | -2.50 | -11.89 | -6.38 | 9.42 | -17.38 | -9.42 | I6->I7 |
| Rh_5_5 | 2.90 | -6.89 | -8.81 | -4.53 | 4.86 | -18.26 | -4.86 | I6->I7 |
| Rh_5_6 | -8.79 | -3.53 | -2.61 | -15.22 | 10.52 | -11.12 | -10.52 | I6->I7 |
| Rh_5_7 | 13.27 | -4.92 | -1.13 | -21.42 | 5.69 | -22.23 | -13.27 | I2->I3 |
| Rh_5_8 | -2.35 | -3.01 | -10.32 | -6.48 | 2.87 | -11.46 | -2.87 | I6->I7 |
| Rh_5_9 | -4.17 | -2.35 | -8.30 | -4.43 | 0.77 | -12.25 | -0.77 | I6->I7 |
| Rh_5_10 | -6.01 | -1.51 | -12.27 | -3.11 | 2.03 | -9.87 | -2.03 | I6->I7 |
| Rh_5_11 | -3.74 | -1.82 | -12.41 | -6.24 | 6.49 | -13.01 | -6.49 | I6->I7 |
| Rh_5_12 | -2.31 | -0.70 | -13.93 | -5.06 | 6.93 | -15.68 | -6.93 | I6->I7 |
| Rh_5_13 | 8.14 | -15.66 | 6.57 | -21.81 | 9.13 | -17.11 | -9.13 | I6->I7 |
| Rh_5_14 | -0.03 | -3.49 | -8.55 | -8.80 | 4.56 | -14.43 | -4.56 | I6->I7 |
| Rh_5_16 | -1.17 | -0.19 | -16.08 | -0.44 | 4.47 | -17.32 | -4.47 | I6->I7 |
| Rh_5_17 | -5.34 | -2.94 | -5.50 | -4.08 | 2.34 | -15.22 | -2.34 | I6->I7 |
| Rh_5_18 | -6.66 | 0.50 | -10.11 | -4.20 | 4.59 | -14.86 | -4.59 | I6->I7 |
| Rh_5_19 | -3.69 | -1.19 | -13.47 | -4.42 | 9.95 | -17.93 | -9.95 | I6->I7 |
| Rh_5_20 | -3.89 | -2.21 | -6.89 | -9.16 | 8.02 | -16.61 | -8.02 | I6->I7 |
| Rh_5_21 | -0.83 | -3.28 | -9.98 | -10.00 | 6.14 | -12.80 | -6.14 | I6->I7 |
| Rh_5_22 | 7.19 | -13.40 | 2.39 | -16.17 | 5.20 | -15.95 | -7.19 | I2->I3 |
| Rh_6_0 | -3.27 | -2.42 | -9.75 | -7.87 | 4.61 | -12.03 | -4.61 | I6->I7 |
| Rh_6_1 | 4.50 | -7.61 | -8.22 | -4.61 | -2.85 | -11.95 | -4.50 | I2->I3 |
| Rh_6_2 | 7.17 | -12.97 | -1.82 | -14.19 | 2.04 | -10.98 | -7.17 | I2->I3 |
| Rh_6_3 | 11.20 | -7.12 | -12.92 | -5.56 | 3.08 | -19.43 | -11.20 | I2->I3 |
| Rh_6_4 | -1.60 | -4.78 | -6.39 | -8.13 | 7.16 | -17.01 | -7.16 | I6->I7 |
| Rh_6_5 | -2.06 | -0.94 | -12.42 | -5.38 | 8.19 | -18.12 | -8.19 | I6->I7 |
| Rh_6_6 | -0.44 | -2.34 | -8.33 | -5.24 | 3.94 | -18.34 | -3.94 | I6->I7 |
| Rh_6_7 | 10.46 | -1.40 | -1.90 | -12.16 | 1.39 | -27.13 | -10.46 | I2->I3 |
| Rh_6_8 | 4.78 | -11.59 | -9.46 | -4.18 | 5.28 | -15.56 | -5.28 | I6->I7 |
| Rh_6_9 | 1.94 | -7.40 | -6.96 | -8.65 | 8.67 | -18.35 | -8.67 | I6->I7 |
| Rh_6_10 | -1.35 | -7.58 | -6.76 | -7.48 | 2.94 | -10.52 | -2.94 | I6->I7 |
| Rh_6_11 | 2.22 | -3.25 | -8.36 | -13.21 | 11.42 | -19.55 | -11.42 | I6->I7 |
| Rh_6_12 | -2.36 | -6.45 | -13.48 | 1.09 | -0.53 | -9.02 | -1.09 | I5->I6 |
| Rh_6_13 | 7.03 | -11.20 | -8.22 | -5.15 | 2.94 | -16.14 | -7.03 | I2->I3 |
| Rh_6_14 | -3.13 | 1.97 | -17.58 | -0.83 | 0.37 | -11.54 | -1.97 | I3->I4 |
| Rh_6_15 | 17.47 | -14.45 | -14.75 | -7.67 | 14.49 | -25.84 | -17.47 | I2->I3 |
| Rh_6_16 | -0.68 | -7.44 | -12.33 | -4.61 | 9.27 | -14.94 | -9.27 | I6->I7 |
| Rh_6_17 | -2.42 | -0.39 | -14.85 | -8.19 | 14.67 | -19.55 | -14.67 | I6->I7 |
| Rh_6_18 | -7.37 | 1.03 | -16.35 | -5.79 | 7.35 | -9.61 | -7.35 | I6->I7 |
| Rh_6_19 | -4.13 | 2.83 | -16.00 | -2.01 | 1.40 | -12.82 | -2.83 | I3->I4 |
| Rh_6_20 | -1.85 | -1.49 | -16.15 | 2.03 | 1.78 | -15.05 | -2.03 | I5->I6 |
| Rh_6_21 | 4.86 | -9.21 | -5.52 | -8.65 | -3.05 | -9.17 | -4.86 | I2->I3 |
| Rh_6_22 | 0.44 | -4.00 | -3.31 | -17.10 | 8.68 | -15.44 | -8.68 | I6->I7 |
| Rh_7_0 | 2.04 | -7.78 | -10.74 | -3.04 | 3.43 | -14.65 | -3.43 | I6->I7 |
| Rh_7_1 | 6.47 | -6.01 | -2.90 | -17.44 | 8.59 | -19.45 | -8.59 | I6->I7 |
| Rh_7_2 | 0.76 | -12.21 | -5.33 | -8.67 | 10.74 | -16.04 | -10.74 | I6->I7 |
| Rh_7_3 | 23.41 | -12.92 | -0.28 | -23.09 | 15.38 | -33.24 | -23.41 | I2->I3 |
| Rh_7_4 | -3.55 | 0.94 | -6.00 | -13.23 | 2.18 | -11.09 | -2.18 | I6->I7 |
| Rh_7_5 | 4.35 | -1.63 | -7.64 | -17.56 | 7.24 | -15.50 | -7.24 | I6->I7 |
| Rh_7_6 | 1.56 | -4.60 | -3.01 | -7.53 | -2.12 | -15.03 | -1.56 | I2->I3 |
| Rh_7_8 | 15.99 | -15.55 | 0.58 | -13.87 | 5.65 | -23.55 | -15.99 | I2->I3 |
| Rh_7_9 | 14.67 | -13.75 | -5.78 | -11.83 | 8.87 | -22.92 | -14.67 | I2->I3 |
| Rh_7_10 | 3.42 | -1.46 | -6.87 | -12.26 | 5.09 | -18.66 | -5.09 | I6->I7 |
| Rh_7_11 | 10.06 | -12.19 | -5.75 | -10.50 | 7.94 | -20.30 | -10.06 | I2->I3 |
| Rh_7_12 | 7.08 | -1.30 | -10.69 | -9.12 | 1.87 | -18.58 | -7.08 | I2->I3 |
| Rh_7_14 | 7.11 | -12.83 | -1.41 | -15.40 | 5.07 | -13.27 | -7.11 | I2->I3 |

| | | | | | | | | |
|----------|-------|--------|--------|--------|-------|--------|--------|--------|
| Rh_7_16 | 9.10 | -6.59 | -11.22 | -12.43 | 13.26 | -22.86 | -13.26 | I6->I7 |
| Rh_7_17 | 8.05 | -7.72 | -3.49 | -16.94 | 12.34 | -22.99 | -12.34 | I6->I7 |
| Rh_7_18 | 6.17 | -6.52 | -7.41 | -12.27 | 13.74 | -24.45 | -13.74 | I6->I7 |
| Rh_7_21 | 12.65 | -1.27 | -13.57 | -12.92 | 10.22 | -25.84 | -12.65 | I2->I3 |
| Rh_7_22 | 11.31 | -7.12 | -9.07 | -12.09 | 6.29 | -20.05 | -11.31 | I2->I3 |
| Rh_8_0 | -3.12 | -4.21 | -10.21 | -4.85 | 3.80 | -12.15 | -3.80 | I6->I7 |
| Rh_8_1 | 0.91 | -8.88 | -10.64 | -3.92 | 6.23 | -14.44 | -6.23 | I6->I7 |
| Rh_8_2 | 7.21 | -10.30 | -2.68 | -16.02 | 6.78 | -15.72 | -7.21 | I2->I3 |
| Rh_8_3 | -1.96 | -6.62 | -13.05 | -2.39 | 11.63 | -18.36 | -11.63 | I6->I7 |
| Rh_8_4 | -2.37 | -6.72 | -8.50 | -0.43 | 2.45 | -15.17 | -2.45 | I6->I7 |
| Rh_8_5 | 2.68 | -6.52 | -6.09 | -10.33 | 7.69 | -18.17 | -7.69 | I6->I7 |
| Rh_8_6 | -2.81 | 4.13 | -18.41 | -1.24 | 3.18 | -15.60 | -4.13 | I3->I4 |
| Rh_8_7 | 20.65 | -10.65 | 0.82 | -31.86 | 32.22 | -41.93 | -32.22 | I6->I7 |
| Rh_8_8 | -1.90 | -4.12 | -11.81 | -1.60 | 4.14 | -15.45 | -4.14 | I6->I7 |
| Rh_8_9 | -2.02 | -4.20 | -4.89 | -12.48 | 7.26 | -14.41 | -7.26 | I6->I7 |
| Rh_8_10 | -1.66 | -0.96 | -14.23 | -3.34 | 6.84 | -17.39 | -6.84 | I6->I7 |
| Rh_8_11 | -4.09 | -0.93 | -11.78 | -5.99 | 8.49 | -16.44 | -8.49 | I6->I7 |
| Rh_8_12 | -1.64 | -1.44 | -15.27 | -2.99 | 5.36 | -14.76 | -5.36 | I6->I7 |
| Rh_8_13 | 5.34 | -5.61 | -5.90 | -9.54 | 13.18 | -28.21 | -13.18 | I6->I7 |
| Rh_8_14 | -4.29 | 0.60 | -15.63 | -3.10 | 5.17 | -13.48 | -5.17 | I6->I7 |
| Rh_8_15 | 10.79 | -6.78 | -8.43 | -10.14 | 13.89 | -30.07 | -13.89 | I6->I7 |
| Rh_8_16 | -4.65 | -3.02 | -6.38 | -11.63 | 7.67 | -12.72 | -7.67 | I6->I7 |
| Rh_8_17 | -4.69 | 1.00 | -15.96 | 2.56 | 4.42 | -18.06 | -4.42 | I6->I7 |
| Rh_8_18 | -4.13 | -4.85 | -8.77 | -5.42 | 9.68 | -17.25 | -9.68 | I6->I7 |
| Rh_8_19 | -4.18 | -4.12 | -8.09 | -6.83 | 9.30 | -16.82 | -9.30 | I6->I7 |
| Rh_8_20 | 0.57 | -7.54 | -10.91 | -3.95 | 7.60 | -16.51 | -7.60 | I6->I7 |
| Rh_8_21 | 2.68 | -9.66 | -6.82 | -12.90 | 14.82 | -18.86 | -14.82 | I6->I7 |
| Rh_8_22 | 0.85 | -7.95 | -7.08 | -10.75 | 9.71 | -15.52 | -9.71 | I6->I7 |
| Rh_9_0 | -4.28 | -4.50 | -7.46 | -8.54 | 6.60 | -12.56 | -6.60 | I6->I7 |
| Rh_9_1 | 2.23 | -7.82 | -9.03 | -5.92 | 4.43 | -14.63 | -4.43 | I6->I7 |
| Rh_9_2 | 4.91 | -5.90 | -6.02 | -10.97 | 4.69 | -17.45 | -4.91 | I2->I3 |
| Rh_9_3 | 5.41 | -5.76 | -5.01 | -12.48 | 4.15 | -17.06 | -5.41 | I2->I3 |
| Rh_9_4 | -2.90 | -2.35 | -11.01 | -7.15 | 6.32 | -13.66 | -6.32 | I6->I7 |
| Rh_9_5 | -2.18 | -3.10 | -9.19 | -4.28 | 2.08 | -14.07 | -2.08 | I6->I7 |
| Rh_9_6 | 10.35 | -9.39 | -18.59 | -3.46 | 5.37 | -15.02 | -10.35 | I2->I3 |
| Rh_9_8 | -3.54 | -0.42 | -14.82 | -3.49 | 6.89 | -15.36 | -6.89 | I6->I7 |
| Rh_9_9 | -2.47 | -0.59 | -11.75 | -7.65 | 6.45 | -14.73 | -6.45 | I6->I7 |
| Rh_9_10 | -5.53 | 0.26 | -8.31 | -8.82 | 3.95 | -12.30 | -3.95 | I6->I7 |
| Rh_9_11 | -5.07 | 0.32 | -14.99 | -1.56 | 5.15 | -14.60 | -5.15 | I6->I7 |
| Rh_9_12 | -2.66 | -1.46 | -13.21 | -3.69 | 5.36 | -15.09 | -5.36 | I6->I7 |
| Rh_9_13 | 0.10 | -4.56 | -7.01 | -2.64 | 4.10 | -20.74 | -4.10 | I6->I7 |
| Rh_9_14 | -3.88 | 1.23 | -16.29 | -2.19 | 4.23 | -13.84 | -4.23 | I6->I7 |
| Rh_9_15 | 5.66 | -11.10 | -8.01 | -7.79 | 15.11 | -24.59 | -15.11 | I6->I7 |
| Rh_9_16 | -0.58 | -6.20 | -7.63 | -3.05 | 3.45 | -16.73 | -3.45 | I6->I7 |
| Rh_9_17 | -6.62 | -0.55 | -11.62 | -5.45 | 10.20 | -16.72 | -10.20 | I6->I7 |
| Rh_9_18 | -4.15 | 0.98 | -9.54 | -6.80 | 3.91 | -15.15 | -3.91 | I6->I7 |
| Rh_9_19 | -4.33 | -2.25 | -4.64 | -15.13 | 10.30 | -14.68 | -10.30 | I6->I7 |
| Rh_9_20 | -0.52 | -0.81 | -12.09 | -7.04 | 6.64 | -16.92 | -6.64 | I6->I7 |
| Rh_9_21 | -1.56 | -4.00 | -2.30 | -11.43 | 1.71 | -13.17 | -1.71 | I6->I7 |
| Rh_9_22 | 4.70 | -11.23 | 0.89 | -19.27 | 10.02 | -15.85 | -10.02 | I6->I7 |
| Rh_10_0 | -3.07 | -2.55 | -10.54 | -5.65 | 5.69 | -14.61 | -5.69 | I6->I7 |
| Rh_10_1 | 0.46 | -7.30 | -10.11 | -6.88 | 6.05 | -12.96 | -6.05 | I6->I7 |
| Rh_10_2 | 2.12 | -4.52 | -5.49 | -14.70 | 9.78 | -17.93 | -9.78 | I6->I7 |
| Rh_10_3 | 9.08 | -4.24 | -4.21 | -12.06 | 11.48 | -30.79 | -11.48 | I6->I7 |
| Rh_10_4 | -2.96 | 0.53 | -15.79 | -4.62 | 8.34 | -16.25 | -8.34 | I6->I7 |
| Rh_10_5 | -2.45 | -5.38 | -6.11 | -1.23 | -0.19 | -15.37 | 0.19 | I6->I7 |
| Rh_10_6 | -0.70 | -5.82 | -7.43 | -2.26 | -0.03 | -14.49 | 0.03 | I6->I7 |
| Rh_10_8 | -1.93 | -1.78 | -12.87 | -4.85 | 5.50 | -14.80 | -5.50 | I6->I7 |
| Rh_10_9 | -2.90 | -0.70 | -13.23 | -2.30 | 5.45 | -17.06 | -5.45 | I6->I7 |
| Rh_10_10 | -2.75 | -3.64 | -11.27 | -3.36 | 4.30 | -14.02 | -4.30 | I6->I7 |

| | | | | | | | | |
|----------|-------|--------|--------|--------|-------|--------|--------|--------|
| Rh_10_11 | -3.65 | -0.80 | -13.57 | -3.26 | 4.49 | -13.96 | -4.49 | I6->I7 |
| Rh_10_12 | -2.18 | -3.30 | -12.03 | -3.25 | 5.52 | -15.50 | -5.52 | I6->I7 |
| Rh_10_13 | 2.34 | 2.26 | -9.76 | -13.08 | 13.99 | -26.49 | -13.99 | I6->I7 |
| Rh_10_14 | -4.13 | 2.42 | -17.54 | -2.08 | 7.52 | -16.93 | -7.52 | I6->I7 |
| Rh_10_15 | 11.89 | -9.97 | -4.36 | -13.51 | 20.18 | -34.97 | -20.18 | I6->I7 |
| Rh_10_16 | -2.28 | -2.38 | -3.20 | -10.72 | 4.95 | -17.12 | -4.95 | I6->I7 |
| Rh_10_17 | -7.12 | -1.97 | -7.67 | -11.00 | 8.31 | -11.30 | -8.31 | I6->I7 |
| Rh_10_18 | -8.12 | -1.53 | -6.97 | -7.19 | 3.55 | -10.48 | -3.55 | I6->I7 |
| Rh_10_19 | -6.01 | -1.82 | -10.29 | -6.18 | 7.34 | -13.78 | -7.34 | I6->I7 |
| Rh_10_20 | 0.36 | -4.31 | -8.46 | -7.00 | 4.35 | -15.69 | -4.35 | I6->I7 |
| Rh_10_21 | -0.63 | 1.18 | -9.76 | -8.54 | 0.82 | -13.81 | -1.18 | I3->I4 |
| Rh_10_22 | 6.58 | -13.08 | 0.24 | -16.56 | 8.79 | -16.70 | -8.79 | I6->I7 |
| Rh_11_0 | -4.09 | -1.54 | -13.11 | -4.11 | 4.88 | -12.77 | -4.88 | I6->I7 |
| Rh_11_1 | 1.13 | -7.20 | -7.76 | -7.42 | 4.15 | -13.65 | -4.15 | I6->I7 |
| Rh_11_2 | 3.12 | -2.61 | -4.50 | -15.86 | 8.27 | -19.17 | -8.27 | I6->I7 |
| Rh_11_3 | 2.41 | -8.90 | -3.34 | -8.98 | 4.75 | -16.68 | -4.75 | I6->I7 |
| Rh_11_4 | -4.79 | -3.87 | -12.04 | -2.19 | 5.12 | -12.98 | -5.12 | I6->I7 |
| Rh_11_5 | -2.36 | -1.22 | -9.36 | -11.35 | 8.20 | -14.66 | -8.20 | I6->I7 |
| Rh_11_6 | -5.90 | 0.03 | -11.46 | -7.70 | 6.46 | -12.16 | -6.46 | I6->I7 |
| Rh_11_7 | 13.85 | -21.33 | 16.37 | -32.61 | 16.33 | -23.35 | -16.37 | I4->I5 |
| Rh_11_8 | -2.29 | -1.16 | -14.75 | 0.17 | 2.24 | -14.94 | -2.24 | I6->I7 |
| Rh_11_9 | -4.32 | 0.93 | -14.62 | -6.41 | 10.00 | -16.32 | -10.00 | I6->I7 |
| Rh_11_10 | -4.08 | 0.44 | -9.25 | -9.42 | 8.26 | -16.69 | -8.26 | I6->I7 |
| Rh_11_11 | -4.90 | -1.97 | -12.50 | -3.65 | 7.15 | -14.86 | -7.15 | I6->I7 |
| Rh_11_12 | -2.31 | 1.39 | -13.08 | -7.65 | 6.65 | -15.74 | -6.65 | I6->I7 |
| Rh_11_13 | 5.85 | -5.78 | -6.56 | -6.45 | 10.19 | -27.99 | -10.19 | I6->I7 |
| Rh_11_14 | -4.78 | -0.77 | -12.71 | -3.40 | 8.20 | -17.27 | -8.20 | I6->I7 |
| Rh_11_15 | 10.42 | -10.55 | -7.02 | 7.66 | -5.96 | -25.29 | -10.42 | I2->I3 |
| Rh_11_16 | -5.77 | -3.70 | -7.77 | -7.44 | 7.26 | -13.32 | -7.26 | I6->I7 |
| Rh_11_17 | -6.22 | -2.21 | -8.42 | -9.29 | 13.87 | -18.47 | -13.87 | I6->I7 |
| Rh_11_18 | -3.27 | 4.37 | -13.10 | -12.21 | 8.83 | -15.36 | -8.83 | I6->I7 |
| Rh_11_19 | -3.34 | -1.80 | -7.67 | -9.12 | 10.59 | -19.40 | -10.59 | I6->I7 |
| Rh_11_20 | -3.60 | -2.04 | -9.24 | -3.02 | 2.09 | -14.92 | -2.09 | I6->I7 |
| Rh_11_21 | -0.45 | 0.05 | -6.64 | -11.10 | 3.49 | -16.10 | -3.49 | I6->I7 |
| Rh_11_22 | 8.65 | -12.64 | -7.74 | -9.82 | 10.02 | -19.20 | -10.02 | I6->I7 |
| Rh_12_0 | -3.08 | -3.86 | -9.80 | -6.07 | 3.41 | -11.33 | -3.41 | I6->I7 |
| Rh_12_1 | -1.71 | -2.79 | -8.50 | -11.34 | 8.48 | -14.88 | -8.48 | I6->I7 |
| Rh_12_2 | 4.15 | -5.01 | -6.99 | -5.96 | 3.01 | -19.95 | -4.15 | I2->I3 |
| Rh_12_3 | 7.52 | -10.45 | -9.08 | -6.57 | 5.86 | -18.02 | -7.52 | I2->I3 |
| Rh_12_4 | -3.77 | 0.17 | -15.85 | -5.04 | 9.14 | -15.38 | -9.14 | I6->I7 |
| Rh_12_5 | -0.32 | -3.96 | -5.77 | -11.92 | 6.55 | -15.32 | -6.55 | I6->I7 |
| Rh_12_6 | -0.88 | -6.07 | -7.96 | -10.23 | 7.98 | -13.58 | -7.98 | I6->I7 |
| Rh_12_7 | 19.77 | -5.45 | -4.36 | -24.81 | 17.71 | -33.59 | -19.77 | I2->I3 |
| Rh_12_8 | -3.89 | -1.22 | -13.99 | -3.53 | 5.51 | -13.62 | -5.51 | I6->I7 |
| Rh_12_9 | -2.75 | -3.85 | -11.21 | -5.11 | 6.48 | -14.30 | -6.48 | I6->I7 |
| Rh_12_10 | -3.10 | -1.18 | -9.30 | -8.28 | 7.13 | -16.02 | -7.13 | I6->I7 |
| Rh_12_11 | -5.50 | 0.98 | -9.10 | -8.71 | 5.08 | -13.49 | -5.08 | I6->I7 |
| Rh_12_12 | -4.29 | 1.20 | -16.50 | -2.57 | 4.74 | -13.31 | -4.74 | I6->I7 |
| Rh_12_13 | 2.20 | -11.33 | 6.99 | -19.88 | 12.58 | -21.29 | -12.58 | I6->I7 |
| Rh_12_14 | 0.43 | -5.91 | -12.82 | -0.54 | 5.93 | -17.82 | -5.93 | I6->I7 |
| Rh_12_15 | 12.09 | -11.69 | -1.95 | -20.55 | 13.69 | -22.33 | -13.69 | I6->I7 |
| Rh_12_16 | -3.77 | -1.74 | -9.31 | -8.29 | 8.71 | -16.34 | -8.71 | I6->I7 |
| Rh_12_17 | -2.99 | 0.37 | -8.42 | -5.77 | 0.61 | -14.52 | -0.61 | I6->I7 |
| Rh_12_18 | -2.65 | -3.13 | -7.62 | -6.12 | -0.17 | -11.04 | 0.17 | I6->I7 |
| Rh_12_19 | -7.54 | -0.59 | -13.96 | -2.53 | 5.83 | -11.96 | -5.83 | I6->I7 |
| Rh_12_20 | -0.06 | -5.51 | -8.59 | -8.88 | 10.03 | -17.73 | -10.03 | I6->I7 |
| Rh_12_21 | -4.00 | -7.11 | -4.89 | -8.21 | 8.49 | -15.03 | -8.49 | I6->I7 |
| Rh_12_22 | 6.98 | -10.35 | -10.63 | -11.52 | 12.38 | -17.59 | -12.38 | I6->I7 |
| Rh_13_0 | 3.33 | -11.42 | -4.07 | -13.36 | 9.01 | -14.22 | -9.01 | I6->I7 |
| Rh_13_1 | -2.22 | -2.09 | -2.15 | -21.96 | 19.25 | -21.56 | -19.25 | I6->I7 |

| | | | | | | | | |
|----------|-------|--------|--------|--------|-------|--------|--------|--------|
| Rh_13_2 | 11.64 | -11.79 | -9.73 | -12.34 | 12.06 | -20.58 | -12.06 | I6->I7 |
| Rh_13_4 | -5.73 | -2.65 | -8.75 | -5.92 | 7.24 | -14.93 | -7.24 | I6->I7 |
| Rh_13_5 | -4.04 | -7.46 | 4.69 | -18.24 | 14.38 | -20.07 | -14.38 | I6->I7 |
| Rh_13_6 | 4.37 | -5.62 | 3.86 | -16.61 | 11.60 | -28.33 | -11.60 | I6->I7 |
| Rh_13_8 | -4.03 | -7.02 | -8.83 | -7.99 | 11.01 | -13.88 | -11.01 | I6->I7 |
| Rh_13_9 | 0.54 | -4.85 | -9.09 | -6.37 | 7.14 | -18.11 | -7.14 | I6->I7 |
| Rh_13_10 | 3.57 | -4.99 | -6.34 | -6.83 | 6.60 | -22.74 | -6.60 | I6->I7 |
| Rh_13_11 | -0.57 | -6.31 | -8.70 | -3.80 | 7.22 | -18.57 | -7.22 | I6->I7 |
| Rh_13_12 | 2.60 | -8.77 | -9.66 | -7.41 | 11.49 | -18.99 | -11.49 | I6->I7 |
| Rh_13_13 | 6.27 | -12.69 | 2.19 | -7.45 | 8.07 | -27.13 | -8.07 | I6->I7 |
| Rh_13_14 | 3.54 | -3.61 | -12.71 | -8.45 | 8.66 | -18.17 | -8.66 | I6->I7 |
| Rh_13_16 | 1.04 | -1.85 | -10.45 | -12.98 | 11.40 | -17.89 | -11.40 | I6->I7 |
| Rh_13_17 | -3.45 | -2.82 | -2.23 | -15.97 | 13.86 | -20.13 | -13.86 | I6->I7 |
| Rh_13_18 | -0.62 | -4.01 | -8.88 | -5.01 | 5.55 | -17.77 | -5.55 | I6->I7 |
| Rh_13_19 | -1.48 | -0.35 | -8.98 | -8.10 | 8.37 | -20.20 | -8.37 | I6->I7 |
| Rh_13_20 | 3.79 | -6.57 | -6.34 | -8.74 | 8.18 | -21.06 | -8.18 | I6->I7 |
| Rh_13_21 | 1.45 | -7.76 | -3.91 | -15.07 | 10.61 | -16.05 | -10.61 | I6->I7 |
| Rh_13_22 | 8.48 | -11.64 | -0.23 | -12.18 | 6.85 | -22.02 | -8.48 | I2->I3 |
| Rh_14_0 | -3.84 | -3.74 | -10.19 | -6.44 | 5.89 | -12.43 | -5.89 | I6->I7 |
| Rh_14_1 | -1.02 | -2.81 | -5.12 | -12.51 | 5.13 | -14.41 | -5.13 | I6->I7 |
| Rh_14_2 | -1.13 | 0.67 | -12.15 | -10.22 | 13.35 | -21.26 | -13.35 | I6->I7 |
| Rh_14_3 | 1.94 | -5.21 | -0.93 | -15.03 | 10.55 | -22.06 | -10.55 | I6->I7 |
| Rh_14_4 | -0.66 | -1.92 | -11.05 | -9.21 | 8.76 | -16.65 | -8.76 | I6->I7 |
| Rh_14_5 | 0.87 | -1.70 | -9.34 | -9.70 | 5.75 | -16.62 | -5.75 | I6->I7 |
| Rh_14_6 | -1.02 | -4.72 | -7.20 | -6.28 | 3.42 | -14.93 | -3.42 | I6->I7 |
| Rh_14_7 | 13.20 | -5.48 | -6.39 | -20.31 | 13.44 | -25.20 | -13.44 | I6->I7 |
| Rh_14_8 | -2.00 | -2.06 | -14.68 | -2.66 | 8.32 | -17.66 | -8.32 | I6->I7 |
| Rh_14_9 | -1.91 | -1.92 | -11.90 | -5.60 | 4.61 | -14.02 | -4.61 | I6->I7 |
| Rh_14_10 | -2.39 | -0.89 | -16.90 | -1.80 | 9.89 | -18.64 | -9.89 | I6->I7 |
| Rh_14_11 | -4.34 | -0.63 | -14.50 | 0.33 | 5.22 | -16.81 | -5.22 | I6->I7 |
| Rh_14_12 | -2.15 | -0.82 | -15.46 | 0.13 | 4.58 | -17.01 | -4.58 | I6->I7 |
| Rh_14_13 | 11.44 | -15.10 | -1.55 | -7.49 | 2.50 | -20.54 | -11.44 | I2->I3 |
| Rh_14_14 | -2.69 | 3.80 | -15.23 | -5.71 | 4.59 | -15.50 | -4.59 | I6->I7 |
| Rh_14_15 | 8.57 | -14.76 | 0.71 | -16.08 | 11.19 | -20.37 | -11.19 | I6->I7 |
| Rh_14_16 | -2.13 | -4.10 | -5.38 | -10.87 | 7.47 | -15.75 | -7.47 | I6->I7 |
| Rh_14_17 | -5.88 | 2.45 | -13.95 | -6.04 | 9.88 | -17.20 | -9.88 | I6->I7 |
| Rh_14_18 | -3.21 | -3.02 | -8.66 | -8.42 | 7.06 | -14.49 | -7.06 | I6->I7 |
| Rh_14_19 | -5.39 | 0.82 | -10.39 | -8.94 | 7.77 | -14.61 | -7.77 | I6->I7 |
| Rh_14_20 | 0.12 | -2.02 | -11.38 | -5.47 | 3.34 | -15.33 | -3.34 | I6->I7 |
| Rh_14_21 | 0.42 | 0.13 | -11.97 | -9.11 | 8.82 | -19.03 | -8.82 | I6->I7 |
| Rh_14_22 | 2.02 | -8.80 | -1.70 | -14.22 | 10.29 | -18.33 | -10.29 | I6->I7 |
| Rh_15_0 | -5.61 | -4.23 | -8.89 | -9.51 | 12.28 | -14.78 | -12.28 | I6->I7 |
| Rh_15_1 | 0.04 | -6.60 | -3.54 | -17.00 | 8.58 | -12.22 | -8.58 | I6->I7 |
| Rh_15_2 | -3.65 | 2.40 | -8.50 | -17.75 | 7.43 | -10.67 | -7.43 | I6->I7 |
| Rh_15_4 | -6.89 | -7.53 | -8.27 | -3.92 | 2.43 | -6.56 | -2.43 | I6->I7 |
| Rh_15_5 | 2.76 | -3.50 | -6.56 | -10.41 | 13.64 | -26.67 | -13.64 | I6->I7 |
| Rh_15_6 | 4.03 | -8.87 | -3.89 | -5.96 | 9.49 | -25.54 | -9.49 | I6->I7 |
| Rh_15_8 | -2.62 | -3.20 | -10.70 | -1.12 | 1.30 | -14.40 | -1.30 | I6->I7 |
| Rh_15_9 | 3.95 | -3.18 | -11.47 | -14.13 | 11.54 | -17.45 | -11.54 | I6->I7 |
| Rh_15_10 | -1.25 | -2.68 | -6.51 | -7.63 | 4.66 | -17.33 | -4.66 | I6->I7 |
| Rh_15_11 | 2.61 | -7.84 | -5.85 | -11.01 | 11.14 | -19.78 | -11.14 | I6->I7 |
| Rh_15_12 | -0.27 | -2.33 | -1.49 | -7.32 | -0.85 | -18.49 | 0.27 | I2->I3 |
| Rh_15_13 | 11.30 | -25.86 | 8.42 | -17.33 | 12.19 | -19.47 | -12.19 | I6->I7 |
| Rh_15_14 | -1.89 | 1.34 | -6.40 | -20.13 | 11.62 | -15.28 | -11.62 | I6->I7 |
| Rh_15_16 | -5.59 | 2.79 | -1.39 | -22.21 | 7.44 | -11.77 | -7.44 | I6->I7 |
| Rh_15_17 | 1.68 | -5.63 | -0.79 | -10.71 | 3.43 | -18.71 | -3.43 | I6->I7 |
| Rh_15_18 | -7.57 | -5.55 | -7.35 | -3.70 | 5.52 | -12.08 | -5.52 | I6->I7 |
| Rh_15_19 | -2.10 | 0.22 | -7.50 | 1.54 | -3.57 | -19.34 | -1.54 | I5->I6 |
| Rh_15_20 | 6.10 | -6.90 | -12.38 | -5.85 | 4.73 | -16.44 | -6.10 | I2->I3 |
| Rh_15_21 | -1.41 | -10.95 | 4.83 | -17.15 | 17.06 | -23.13 | -17.06 | I6->I7 |

| | | | | | | | | |
|----------|-------|--------|--------|--------|-------|--------|--------|--------|
| Rh_15_22 | 15.95 | -17.31 | -4.01 | -10.29 | 3.61 | -18.69 | -15.95 | I2->I3 |
| Rh_16_0 | -1.24 | -5.02 | -4.87 | -5.17 | -0.54 | -13.90 | 0.54 | I6->I7 |
| Rh_16_1 | 2.37 | -3.08 | -6.94 | -16.24 | 6.97 | -13.82 | -6.97 | I6->I7 |
| Rh_16_2 | 5.80 | -5.19 | -5.52 | -15.42 | 5.88 | -16.29 | -5.88 | I6->I7 |
| Rh_16_3 | 4.25 | -3.00 | -5.31 | -13.20 | 7.40 | -20.88 | -7.40 | I6->I7 |
| Rh_16_4 | 2.58 | -6.08 | -8.29 | -5.72 | 4.65 | -17.88 | -4.65 | I6->I7 |
| Rh_16_5 | -2.64 | -4.47 | -11.97 | -5.62 | 8.17 | -14.22 | -8.17 | I6->I7 |
| Rh_16_6 | 2.62 | -5.80 | -0.94 | -10.97 | 5.02 | -20.68 | -5.02 | I6->I7 |
| Rh_16_7 | 19.80 | -17.76 | 5.37 | -26.15 | 12.81 | -24.81 | -19.80 | I2->I3 |
| Rh_16_8 | -3.84 | 4.08 | -17.31 | -0.77 | 3.48 | -16.37 | -4.08 | I3->I4 |
| Rh_16_9 | -0.23 | -3.16 | -6.17 | -7.74 | 3.97 | -17.41 | -3.97 | I6->I7 |
| Rh_16_10 | -3.91 | -4.18 | -5.61 | -4.46 | 1.37 | -13.96 | -1.37 | I6->I7 |
| Rh_16_11 | -1.99 | -3.91 | -8.31 | -8.19 | 8.85 | -17.19 | -8.85 | I6->I7 |
| Rh_16_12 | -1.81 | 2.05 | -15.10 | -6.16 | 4.34 | -14.05 | -4.34 | I6->I7 |
| Rh_16_13 | 6.50 | -11.48 | -1.26 | -5.95 | 3.01 | -21.56 | -6.50 | I2->I3 |
| Rh_16_14 | -6.30 | -2.24 | -8.84 | -5.47 | 2.33 | -10.22 | -2.33 | I6->I7 |
| Rh_16_16 | -7.18 | 0.54 | -11.33 | -2.75 | 7.06 | -17.08 | -7.06 | I6->I7 |
| Rh_16_17 | -2.76 | -2.39 | -14.56 | -0.68 | 6.05 | -16.40 | -6.05 | I6->I7 |
| Rh_16_18 | -5.23 | 0.48 | -4.74 | -10.01 | 6.37 | -17.61 | -6.37 | I6->I7 |
| Rh_16_19 | -7.12 | -1.89 | -9.15 | -4.48 | 6.62 | -14.73 | -6.62 | I6->I7 |
| Rh_16_20 | -1.96 | -2.48 | -8.71 | -3.00 | 1.39 | -15.99 | -1.39 | I6->I7 |
| Rh_16_21 | 7.02 | -13.27 | 2.52 | -7.77 | 6.06 | -25.29 | -7.02 | I2->I3 |
| Rh_16_22 | 5.84 | -11.30 | -5.23 | -3.00 | 6.08 | -23.14 | -6.08 | I6->I7 |
| Rh_17_0 | -1.71 | -4.94 | -11.20 | -4.73 | 5.81 | -13.97 | -5.81 | I6->I7 |
| Rh_17_1 | 0.05 | -5.22 | -7.17 | -3.65 | -1.09 | -13.66 | -0.05 | I2->I3 |
| Rh_17_2 | 4.33 | -9.29 | -4.26 | -10.88 | 8.00 | -18.64 | -8.00 | I6->I7 |
| Rh_17_3 | 0.96 | -5.51 | -0.29 | -17.29 | 6.54 | -15.15 | -6.54 | I6->I7 |
| Rh_17_4 | 0.49 | -5.10 | -8.90 | -5.14 | 5.29 | -17.39 | -5.29 | I6->I7 |
| Rh_17_5 | 0.21 | -7.21 | -3.93 | -10.33 | 9.33 | -18.81 | -9.33 | I6->I7 |
| Rh_17_6 | 4.45 | -12.79 | -3.47 | -10.55 | 11.06 | -19.43 | -11.06 | I6->I7 |
| Rh_17_7 | 19.36 | -13.08 | -0.39 | -6.44 | -2.92 | -27.26 | -19.36 | I2->I3 |
| Rh_17_8 | -1.10 | -4.16 | -13.70 | 2.02 | -0.30 | -13.49 | -2.02 | I5->I6 |
| Rh_17_9 | -5.86 | -5.71 | -4.28 | -7.69 | 3.33 | -10.53 | -3.33 | I6->I7 |
| Rh_17_10 | -2.62 | -1.49 | -12.86 | -2.64 | 5.39 | -16.53 | -5.39 | I6->I7 |
| Rh_17_11 | -3.81 | 1.96 | -14.89 | -2.98 | 5.10 | -16.13 | -5.10 | I6->I7 |
| Rh_17_12 | -2.61 | 1.78 | -14.82 | -5.58 | 5.32 | -14.82 | -5.32 | I6->I7 |
| Rh_17_13 | 7.24 | -10.17 | -2.42 | -12.76 | 13.46 | -26.10 | -13.46 | I6->I7 |
| Rh_17_14 | -5.89 | 0.96 | -12.21 | -2.10 | 4.86 | -16.35 | -4.86 | I6->I7 |
| Rh_17_15 | 5.41 | -9.24 | -4.93 | -15.24 | 17.05 | -23.79 | -17.05 | I6->I7 |
| Rh_17_16 | -4.51 | -0.01 | -10.88 | -6.39 | 9.75 | -18.70 | -9.75 | I6->I7 |
| Rh_17_17 | -8.09 | 0.40 | -12.78 | -2.21 | 9.91 | -17.97 | -9.91 | I6->I7 |
| Rh_17_18 | -5.44 | 0.77 | -15.40 | -3.54 | 10.24 | -17.38 | -10.24 | I6->I7 |
| Rh_17_19 | -6.30 | 1.66 | -13.59 | -3.14 | 7.55 | -16.94 | -7.55 | I6->I7 |
| Rh_17_20 | -2.83 | 0.17 | -8.22 | -5.42 | 5.07 | -19.51 | -5.07 | I6->I7 |
| Rh_17_21 | 7.85 | -7.44 | -7.24 | -16.97 | 10.16 | -17.10 | -10.16 | I6->I7 |
| Rh_17_22 | 4.72 | -9.45 | 7.66 | -16.02 | 0.62 | -18.27 | -7.66 | I4->I5 |
| Rh_18_0 | -0.26 | -3.72 | -7.61 | -11.54 | 6.37 | -13.98 | -6.37 | I6->I7 |
| Rh_18_1 | 2.04 | -6.01 | -3.67 | -6.82 | -1.26 | -15.02 | -2.04 | I2->I3 |
| Rh_18_2 | 9.98 | -13.12 | -2.22 | -15.45 | 7.31 | -17.25 | -9.98 | I2->I3 |
| Rh_18_3 | 8.75 | -6.48 | 1.04 | -16.59 | 3.33 | -20.79 | -8.75 | I2->I3 |
| Rh_18_4 | -0.85 | -2.16 | -8.18 | -4.51 | 4.28 | -19.32 | -4.28 | I6->I7 |
| Rh_18_5 | 1.84 | -7.30 | -3.25 | -10.69 | 5.74 | -17.08 | -5.74 | I6->I7 |
| Rh_18_6 | 0.46 | -4.78 | -7.81 | -8.14 | 8.68 | -19.15 | -8.68 | I6->I7 |
| Rh_18_7 | 16.02 | -4.40 | -11.00 | -12.80 | 8.10 | -26.67 | -16.02 | I2->I3 |
| Rh_18_8 | -1.38 | -6.11 | -10.80 | -1.66 | 1.50 | -12.29 | -1.50 | I6->I7 |
| Rh_18_9 | -2.59 | -1.18 | -8.09 | -6.75 | -1.06 | -11.06 | 1.06 | I6->I7 |
| Rh_18_10 | -5.20 | 2.78 | -16.92 | -3.23 | 3.77 | -11.94 | -3.77 | I6->I7 |
| Rh_18_11 | -3.31 | 1.11 | -15.71 | -4.22 | 5.87 | -14.49 | -5.87 | I6->I7 |
| Rh_18_12 | -0.19 | -6.16 | -12.98 | -1.26 | 4.93 | -15.08 | -4.93 | I6->I7 |
| Rh_18_13 | 2.97 | -1.99 | 1.61 | -16.63 | 1.94 | -18.65 | -2.97 | I2->I3 |

| | | | | | | | | |
|----------|--------|--------|--------|--------|-------|--------|--------|--------|
| Rh_18_14 | -6.80 | -0.32 | -6.78 | -3.67 | -1.92 | -11.24 | 0.32 | I3->I4 |
| Rh_18_15 | 1.84 | -13.82 | -2.91 | -11.20 | 16.51 | -21.16 | -16.51 | I6->I7 |
| Rh_18_16 | -5.63 | 1.05 | -13.17 | -6.10 | 8.56 | -15.45 | -8.56 | I6->I7 |
| Rh_18_17 | -4.47 | -4.41 | -10.71 | -3.42 | 10.38 | -18.10 | -10.38 | I6->I7 |
| Rh_18_18 | -6.96 | 1.98 | -12.58 | -4.46 | 7.06 | -15.79 | -7.06 | I6->I7 |
| Rh_18_19 | -6.33 | 0.87 | -6.22 | -11.64 | 8.44 | -15.86 | -8.44 | I6->I7 |
| Rh_18_20 | -1.60 | 4.89 | -15.17 | -7.81 | 8.23 | -19.28 | -8.23 | I6->I7 |
| Rh_18_21 | -0.25 | -3.59 | -3.93 | -16.61 | 12.28 | -18.65 | -12.28 | I6->I7 |
| Rh_18_22 | 5.89 | -5.69 | -2.82 | -15.07 | 10.96 | -24.02 | -10.96 | I6->I7 |
| Rh_19_0 | -5.75 | -5.59 | -10.70 | -2.46 | 2.80 | -9.04 | -2.80 | I6->I7 |
| Rh_19_1 | 2.73 | -8.87 | -2.12 | -5.17 | -1.02 | -16.30 | -2.73 | I2->I3 |
| Rh_19_2 | 7.91 | -10.05 | -6.00 | -14.15 | 7.80 | -16.25 | -7.91 | I2->I3 |
| Rh_19_3 | 4.52 | -8.78 | -1.10 | -13.31 | 8.82 | -20.89 | -8.82 | I6->I7 |
| Rh_19_4 | 2.44 | -6.03 | -10.12 | -1.94 | 4.44 | -19.53 | -4.44 | I6->I7 |
| Rh_19_5 | 3.66 | -6.18 | -5.10 | -11.40 | 5.96 | -17.69 | -5.96 | I6->I7 |
| Rh_19_6 | 6.42 | -11.02 | -9.48 | -6.41 | 8.51 | -18.76 | -8.51 | I6->I7 |
| Rh_19_8 | -3.21 | -1.71 | -13.15 | 0.53 | 1.94 | -15.14 | -1.94 | I6->I7 |
| Rh_19_9 | -2.37 | 2.07 | -15.00 | -2.36 | 1.80 | -14.88 | -2.07 | I3->I4 |
| Rh_19_10 | -2.55 | -3.27 | -4.43 | -15.04 | 8.81 | -14.27 | -8.81 | I6->I7 |
| Rh_19_11 | -3.29 | -2.95 | -9.67 | -6.33 | 6.78 | -15.28 | -6.78 | I6->I7 |
| Rh_19_12 | -0.01 | -2.65 | -12.69 | -1.91 | 6.31 | -19.79 | -6.31 | I6->I7 |
| Rh_19_13 | -1.38 | -6.03 | -5.23 | -8.77 | 2.39 | -11.72 | -2.39 | I6->I7 |
| Rh_19_14 | -3.91 | -1.73 | -11.32 | -8.88 | 6.60 | -11.50 | -6.60 | I6->I7 |
| Rh_19_15 | 0.19 | -5.55 | -8.63 | -9.25 | 5.07 | -12.57 | -5.07 | I6->I7 |
| Rh_19_16 | -4.89 | -1.61 | -11.51 | -4.68 | 7.09 | -15.14 | -7.09 | I6->I7 |
| Rh_19_17 | -4.39 | -3.00 | -14.46 | -1.37 | 9.79 | -17.30 | -9.79 | I6->I7 |
| Rh_19_18 | -3.36 | -1.94 | -10.09 | -7.23 | 9.04 | -17.16 | -9.04 | I6->I7 |
| Rh_19_19 | -10.48 | -0.28 | -6.89 | -8.16 | 14.39 | -19.32 | -14.39 | I6->I7 |
| Rh_19_20 | -0.50 | -6.68 | -11.94 | -1.04 | 4.26 | -14.84 | -4.26 | I6->I7 |
| Rh_19_21 | -2.95 | -6.91 | -4.94 | -10.93 | 7.96 | -12.97 | -7.96 | I6->I7 |
| Rh_19_22 | 7.20 | -9.89 | 10.28 | -27.06 | 19.19 | -30.47 | -19.19 | I6->I7 |
| Rh_20_0 | -1.51 | -5.65 | -6.35 | -7.97 | 3.94 | -13.20 | -3.94 | I6->I7 |
| Rh_20_1 | 0.26 | -4.69 | -8.70 | -7.94 | 5.81 | -15.47 | -5.81 | I6->I7 |
| Rh_20_2 | 8.53 | -14.11 | -3.19 | -10.16 | 15.79 | -27.60 | -15.79 | I6->I7 |
| Rh_20_3 | 4.36 | -6.13 | 4.41 | -18.98 | 5.47 | -19.86 | -5.47 | I6->I7 |
| Rh_20_4 | -0.19 | -2.32 | -15.44 | -3.39 | 5.72 | -15.11 | -5.72 | I6->I7 |
| Rh_20_5 | 1.45 | -7.31 | -7.19 | -6.82 | 11.72 | -22.58 | -11.72 | I6->I7 |
| Rh_20_6 | 0.45 | -3.95 | -1.74 | -11.10 | 3.43 | -17.83 | -3.43 | I6->I7 |
| Rh_20_7 | 10.54 | -10.87 | 4.47 | -14.17 | 4.58 | -25.29 | -10.54 | I2->I3 |
| Rh_20_8 | -0.64 | -2.53 | -14.84 | -4.34 | 7.32 | -15.72 | -7.32 | I6->I7 |
| Rh_20_9 | -0.51 | -3.47 | -10.15 | -7.65 | 6.11 | -15.07 | -6.11 | I6->I7 |
| Rh_20_10 | -2.70 | 0.56 | -16.43 | -1.74 | -0.84 | -9.60 | -0.56 | I3->I4 |
| Rh_20_11 | -3.02 | -0.88 | -5.61 | -12.18 | 4.83 | -13.87 | -4.83 | I6->I7 |
| Rh_20_12 | -4.63 | -0.90 | -7.10 | -11.06 | 7.90 | -14.96 | -7.90 | I6->I7 |
| Rh_20_13 | 0.03 | -5.28 | -5.79 | -8.87 | 9.68 | -20.52 | -9.68 | I6->I7 |
| Rh_20_14 | -1.95 | -5.88 | -9.67 | 3.38 | -8.18 | -8.43 | -3.38 | I5->I6 |
| Rh_20_15 | 7.28 | -2.33 | -2.53 | -12.30 | 0.08 | -20.94 | -7.28 | I2->I3 |
| Rh_20_16 | -3.91 | -1.32 | -8.65 | -7.53 | 7.18 | -16.53 | -7.18 | I6->I7 |
| Rh_20_17 | -3.60 | -2.03 | -9.99 | -5.51 | 9.21 | -18.82 | -9.21 | I6->I7 |
| Rh_20_18 | -2.67 | -5.30 | -9.28 | -5.99 | 13.26 | -20.75 | -13.26 | I6->I7 |
| Rh_20_19 | -5.39 | -2.23 | -8.99 | -2.06 | 4.25 | -16.33 | -4.25 | I6->I7 |
| Rh_20_20 | 1.11 | -6.52 | -8.27 | -1.73 | 3.45 | -18.79 | -3.45 | I6->I7 |
| Rh_20_21 | 1.64 | -6.63 | -2.52 | -16.15 | 9.40 | -16.47 | -9.40 | I6->I7 |
| Rh_21_0 | -2.02 | -3.82 | -5.57 | -12.31 | 4.30 | -11.32 | -4.30 | I6->I7 |
| Rh_21_1 | 0.72 | -4.90 | -2.61 | -10.37 | 0.04 | -13.63 | -0.72 | I2->I3 |
| Rh_21_2 | 7.04 | -13.81 | -5.18 | -6.12 | 3.55 | -16.22 | -7.04 | I2->I3 |
| Rh_21_3 | 8.22 | -12.79 | -1.02 | -16.52 | 8.12 | -16.75 | -8.22 | I2->I3 |
| Rh_21_4 | 1.86 | -9.04 | -1.17 | -10.87 | 3.71 | -15.23 | -3.71 | I6->I7 |
| Rh_21_5 | 0.06 | -4.89 | -6.16 | -8.64 | 3.53 | -14.62 | -3.53 | I6->I7 |
| Rh_21_6 | 0.70 | 0.65 | -14.95 | 1.06 | -6.99 | -11.21 | -1.06 | I5->I6 |

| | | | | | | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|
| Rh_21_8 | -2.00 | -1.58 | -13.00 | -4.14 | 3.09 | -13.10 | -3.09 | I6->I7 |
| Rh_21_9 | -3.17 | -4.91 | -8.32 | -9.69 | 8.05 | -12.71 | -8.05 | I6->I7 |
| Rh_21_10 | 1.79 | -4.30 | -16.04 | -7.73 | 10.01 | -14.48 | -10.01 | I6->I7 |
| Rh_21_11 | -2.46 | -1.13 | -8.35 | -10.36 | 8.05 | -16.48 | -8.05 | I6->I7 |
| Rh_21_12 | 0.50 | -7.03 | -7.56 | -11.08 | 9.20 | -14.77 | -9.20 | I6->I7 |
| Rh_21_13 | 4.58 | -6.89 | -1.22 | -13.07 | 12.11 | -26.24 | -12.11 | I6->I7 |
| Rh_21_14 | -2.08 | -6.50 | -9.90 | -6.65 | 3.90 | -9.51 | -3.90 | I6->I7 |
| Rh_21_15 | 13.84 | -9.26 | -8.19 | -24.78 | 29.64 | -31.98 | -29.64 | I6->I7 |
| Rh_21_16 | -5.91 | -0.71 | -12.73 | -4.85 | 7.80 | -14.34 | -7.80 | I6->I7 |
| Rh_21_17 | -3.86 | -2.47 | -9.64 | -9.24 | 11.20 | -16.74 | -11.20 | I6->I7 |
| Rh_21_18 | -1.02 | -1.86 | -8.74 | -11.65 | 14.52 | -21.99 | -14.52 | I6->I7 |
| Rh_21_19 | -2.53 | 6.29 | -9.19 | -11.95 | 2.56 | -15.92 | -6.29 | I3->I4 |
| Rh_21_20 | -1.93 | -2.34 | -7.06 | -9.43 | 7.00 | -16.98 | -7.00 | I6->I7 |
| Rh_21_21 | 8.80 | -12.71 | -2.21 | -14.74 | 4.38 | -14.25 | -8.80 | I2->I3 |
| Rh_21_22 | 8.36 | -8.27 | 1.96 | -20.62 | 8.17 | -20.33 | -8.36 | I2->I3 |
| Rh_22_0 | 1.31 | -8.83 | -9.37 | -7.07 | 5.08 | -11.87 | -5.08 | I6->I7 |
| Rh_22_1 | 4.05 | -6.13 | 0.82 | -20.83 | 7.32 | -15.98 | -7.32 | I6->I7 |
| Rh_22_2 | 13.92 | -13.19 | 1.49 | -22.45 | 9.85 | -20.36 | -13.92 | I2->I3 |
| Rh_22_3 | 7.85 | -7.58 | -2.54 | -14.71 | 6.46 | -20.23 | -7.85 | I2->I3 |
| Rh_22_4 | 1.88 | -7.17 | -7.63 | -7.89 | 2.41 | -12.35 | -2.41 | I6->I7 |
| Rh_22_5 | 2.90 | -5.46 | -9.58 | -5.81 | -0.01 | -12.78 | -2.90 | I2->I3 |
| Rh_22_6 | -0.41 | -3.20 | -7.76 | -7.50 | 2.73 | -14.60 | -2.73 | I6->I7 |
| Rh_22_8 | -0.77 | -2.00 | -9.97 | -11.75 | 6.46 | -12.72 | -6.46 | I6->I7 |
| Rh_22_9 | -1.77 | -4.69 | -8.62 | -9.29 | 10.24 | -16.60 | -10.24 | I6->I7 |
| Rh_22_10 | 0.42 | -5.72 | -7.57 | -5.12 | 4.39 | -17.14 | -4.39 | I6->I7 |
| Rh_22_11 | 2.84 | -7.91 | -6.68 | -11.08 | 10.61 | -18.52 | -10.61 | I6->I7 |
| Rh_22_12 | 0.98 | -2.07 | -12.04 | -14.16 | 12.16 | -15.61 | -12.16 | I6->I7 |
| Rh_22_13 | 3.54 | -9.29 | 6.72 | -19.42 | 16.41 | -28.70 | -16.41 | I6->I7 |
| Rh_22_14 | -1.53 | -3.73 | -6.21 | -16.90 | 12.62 | -14.99 | -12.62 | I6->I7 |
| Rh_22_16 | -1.37 | -7.27 | -9.57 | -8.88 | 13.55 | -17.19 | -13.55 | I6->I7 |
| Rh_22_17 | -2.33 | -1.47 | -9.64 | -5.35 | 4.42 | -16.38 | -4.42 | I6->I7 |
| Rh_22_18 | 1.48 | -5.18 | -0.58 | -16.99 | 7.42 | -16.89 | -7.42 | I6->I7 |
| Rh_22_19 | -5.77 | 3.34 | -15.52 | -3.00 | 5.39 | -15.19 | -5.39 | I6->I7 |
| Rh_22_20 | -0.17 | 0.80 | -10.04 | -11.34 | 8.21 | -18.20 | -8.21 | I6->I7 |
| Rh_22_21 | 8.67 | -15.47 | -5.17 | -12.06 | 10.14 | -16.85 | -10.14 | I6->I7 |
| Rh_22_22 | 6.29 | -12.80 | 2.61 | -13.41 | 6.61 | -20.05 | -6.61 | I6->I7 |
| Ir_0_0 | -8.23 | 1.25 | -14.84 | -1.46 | -11.81 | 4.35 | -4.35 | I7->I2 |
| Ir_0_1 | -6.15 | -0.01 | -14.49 | -1.79 | -8.21 | -0.09 | 0.01 | I3->I4 |
| Ir_0_2 | -7.90 | 1.09 | -12.67 | -5.54 | -8.30 | 2.59 | -2.59 | I7->I2 |
| Ir_0_3 | -1.42 | -4.47 | -3.92 | -8.69 | -8.57 | -3.67 | 1.42 | I2->I3 |
| Ir_0_4 | -8.12 | 1.22 | -17.05 | 3.46 | -11.75 | 1.50 | -3.46 | I5->I6 |
| Ir_0_5 | -7.56 | 1.44 | -10.97 | -2.03 | -12.29 | 0.68 | -1.44 | I3->I4 |
| Ir_0_6 | -3.10 | -2.09 | -19.89 | 3.83 | -14.19 | 4.70 | -4.70 | I7->I2 |
| Ir_0_7 | 2.00 | -7.03 | -6.54 | -4.84 | -11.53 | -2.81 | -2.00 | I2->I3 |
| Ir_0_8 | -8.74 | 1.80 | -13.51 | -0.92 | -9.07 | -0.31 | -1.80 | I3->I4 |
| Ir_0_9 | -11.64 | 1.55 | -14.65 | -1.38 | -8.05 | 3.43 | -3.43 | I7->I2 |
| Ir_0_10 | -9.43 | 2.29 | -14.04 | -0.56 | -9.43 | 0.42 | -2.29 | I3->I4 |
| Ir_0_11 | -11.20 | 2.01 | -18.12 | 3.49 | -10.82 | 3.91 | -3.91 | I7->I2 |
| Ir_0_12 | -8.49 | 0.83 | -11.77 | -1.18 | -9.91 | -0.22 | -0.83 | I3->I4 |
| Ir_0_13 | -4.05 | -3.42 | -7.51 | -4.66 | -4.06 | -7.05 | 3.42 | I3->I4 |
| Ir_0_14 | -7.90 | 1.79 | -18.15 | 1.78 | -9.37 | 1.11 | -1.79 | I3->I4 |
| Ir_0_15 | -1.60 | -7.66 | -3.98 | -11.14 | -6.34 | -0.02 | 0.02 | I7->I2 |
| Ir_0_16 | -8.20 | 2.52 | -13.84 | -5.47 | -6.50 | 0.76 | -2.52 | I3->I4 |
| Ir_0_17 | -8.64 | 6.29 | -18.93 | 0.35 | -2.06 | -7.75 | -6.29 | I3->I4 |
| Ir_0_18 | -6.30 | 4.46 | -14.77 | -1.87 | -10.19 | -2.07 | -4.46 | I3->I4 |
| Ir_0_19 | -7.27 | 1.86 | -16.99 | -0.94 | -5.80 | -1.60 | -1.86 | I3->I4 |
| Ir_0_20 | -8.80 | 4.31 | -9.39 | -6.55 | -7.31 | -3.01 | -4.31 | I3->I4 |
| Ir_0_21 | -1.56 | -7.00 | -9.83 | -5.76 | -4.46 | -2.13 | 1.56 | I2->I3 |
| Ir_0_22 | 3.27 | -7.26 | -8.09 | -6.95 | -10.15 | -1.56 | -3.27 | I2->I3 |
| Ir_1_0 | -7.16 | 1.12 | -15.86 | -2.06 | -10.11 | 3.33 | -3.33 | I7->I2 |

| | | | | | | | | |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|
| Ir_1_1 | -1.16 | -4.07 | -13.63 | -2.78 | -10.21 | 1.12 | -1.12 | I7->I2 |
| Ir_1_2 | -4.08 | 1.55 | -12.71 | -4.08 | -11.51 | 0.08 | -1.55 | I3->I4 |
| Ir_1_3 | 0.01 | -4.64 | -8.88 | -5.33 | -6.57 | -5.32 | -0.01 | I2->I3 |
| Ir_1_4 | -8.25 | 1.02 | -16.59 | 1.36 | -9.73 | 1.45 | -1.45 | I7->I2 |
| Ir_1_5 | -5.87 | 3.55 | -12.96 | -3.34 | -13.48 | 1.36 | -3.55 | I3->I4 |
| Ir_1_6 | 1.49 | -0.05 | -17.12 | 0.48 | -15.98 | 0.43 | -1.49 | I2->I3 |
| Ir_1_7 | 13.36 | -5.54 | -4.38 | -8.28 | -17.57 | -8.33 | -13.36 | I2->I3 |
| Ir_1_8 | -8.32 | 0.11 | -11.64 | -3.14 | -6.93 | -0.81 | -0.11 | I3->I4 |
| Ir_1_9 | -9.85 | 2.89 | -11.21 | -3.25 | -7.35 | -1.97 | -2.89 | I3->I4 |
| Ir_1_10 | -7.94 | 0.10 | -13.79 | -0.92 | -7.20 | -0.99 | -0.10 | I3->I4 |
| Ir_1_11 | -6.32 | 0.07 | -15.48 | 2.75 | -13.92 | 2.16 | -2.75 | I5->I6 |
| Ir_1_12 | -7.68 | 1.83 | -14.70 | -2.06 | -9.27 | 1.15 | -1.83 | I3->I4 |
| Ir_1_13 | 6.65 | -9.47 | -6.07 | -10.75 | 9.17 | -20.27 | -9.17 | I6->I7 |
| Ir_1_14 | -7.34 | 1.36 | -14.13 | -1.05 | -6.77 | -2.81 | -1.36 | I3->I4 |
| Ir_1_16 | -8.60 | -0.55 | -8.49 | -9.42 | -4.00 | 0.31 | -0.31 | I7->I2 |
| Ir_1_17 | -4.45 | -1.98 | -9.29 | -1.99 | -5.18 | -7.85 | 1.98 | I3->I4 |
| Ir_1_18 | -2.43 | 0.33 | -13.24 | 4.94 | -14.23 | -6.11 | -4.94 | I5->I6 |
| Ir_1_19 | -9.50 | 1.36 | -12.30 | 2.35 | -11.88 | -0.77 | -2.35 | I5->I6 |
| Ir_1_20 | -4.06 | -2.91 | -8.22 | -7.40 | -1.30 | -6.85 | 1.30 | I6->I7 |
| Ir_1_21 | -3.25 | -0.21 | -12.04 | -5.41 | -5.43 | -4.40 | 0.21 | I3->I4 |
| Ir_1_22 | 4.75 | -9.16 | -8.30 | -1.96 | -9.01 | -7.06 | -4.75 | I2->I3 |
| Ir_2_0 | -5.86 | -1.36 | -10.63 | -3.11 | -12.48 | 2.71 | -2.71 | I7->I2 |
| Ir_2_1 | 0.28 | -6.46 | -9.64 | -8.86 | -5.76 | -0.31 | -0.28 | I2->I3 |
| Ir_2_2 | -2.61 | 0.15 | -11.04 | -3.59 | -8.90 | -4.76 | -0.15 | I3->I4 |
| Ir_2_3 | -5.31 | -1.37 | -7.06 | -4.11 | -11.87 | -1.03 | 1.03 | I7->I2 |
| Ir_2_4 | -10.09 | 2.41 | -8.41 | -3.63 | -6.45 | -4.57 | -2.41 | I3->I4 |
| Ir_2_5 | -3.59 | -5.12 | -3.73 | -10.88 | -4.19 | -3.23 | 3.23 | I7->I2 |
| Ir_2_6 | -0.81 | -2.48 | -13.48 | -0.03 | -12.14 | -1.80 | 0.03 | I5->I6 |
| Ir_2_7 | 11.24 | -3.54 | -9.23 | -4.17 | -7.46 | -17.59 | -11.24 | I2->I3 |
| Ir_2_8 | -4.83 | -1.28 | -9.82 | -4.90 | -12.73 | 2.82 | -2.82 | I7->I2 |
| Ir_2_9 | -3.68 | -2.36 | -14.18 | -2.93 | -10.07 | 2.48 | -2.48 | I7->I2 |
| Ir_2_10 | -8.39 | -0.38 | -13.35 | 0.56 | -5.63 | -3.55 | -0.56 | I5->I6 |
| Ir_2_11 | -6.11 | 0.07 | -16.16 | 1.75 | -5.47 | -4.82 | -1.75 | I5->I6 |
| Ir_2_12 | -6.43 | -0.69 | -11.48 | -4.81 | -6.36 | -0.96 | 0.69 | I3->I4 |
| Ir_2_13 | 1.87 | -5.27 | -11.43 | 0.63 | -5.42 | -11.12 | -1.87 | I2->I3 |
| Ir_2_14 | -9.90 | 5.48 | -13.74 | -5.95 | 2.87 | -9.49 | -5.48 | I3->I4 |
| Ir_2_16 | -6.72 | 4.85 | -16.95 | -2.24 | -1.78 | -7.90 | -4.85 | I3->I4 |
| Ir_2_17 | -11.54 | 5.68 | -11.23 | -1.87 | -13.36 | 1.58 | -5.68 | I3->I4 |
| Ir_2_18 | -8.51 | 4.02 | -8.77 | -7.75 | -6.70 | -3.03 | -4.02 | I3->I4 |
| Ir_2_19 | -5.50 | 2.73 | -8.38 | -6.64 | -1.66 | -11.29 | -2.73 | I3->I4 |
| Ir_2_20 | -0.54 | -4.65 | -2.98 | -8.47 | -8.61 | -5.49 | 0.54 | I2->I3 |
| Ir_2_21 | -1.22 | -1.23 | -0.59 | -15.82 | -4.18 | -7.70 | 0.59 | I4->I5 |
| Ir_2_22 | -4.82 | 1.38 | -7.72 | -4.36 | -1.60 | -13.62 | -1.38 | I3->I4 |
| Ir_3_0 | -6.93 | 0.34 | -10.64 | -6.09 | -11.85 | 4.43 | -4.43 | I7->I2 |
| Ir_3_1 | -2.30 | -1.08 | -13.03 | -6.38 | -6.68 | -1.27 | 1.08 | I3->I4 |
| Ir_3_2 | 0.96 | -3.28 | -12.75 | -4.39 | -10.51 | -0.77 | -0.96 | I2->I3 |
| Ir_3_3 | -0.04 | -1.53 | -7.20 | -8.79 | -11.29 | -1.89 | 0.04 | I2->I3 |
| Ir_3_4 | -7.97 | 2.51 | -16.40 | 2.80 | -11.04 | -0.64 | -2.80 | I5->I6 |
| Ir_3_5 | -1.58 | -1.88 | -14.92 | -1.19 | -11.65 | 0.48 | -0.48 | I7->I2 |
| Ir_3_6 | -3.11 | 3.64 | -16.62 | -0.75 | -15.24 | 1.34 | -3.64 | I3->I4 |
| Ir_3_8 | -4.93 | 6.70 | -18.07 | 0.95 | -11.98 | -3.41 | -6.70 | I3->I4 |
| Ir_3_9 | -1.46 | -5.14 | -13.87 | 0.71 | -10.93 | -0.05 | -0.71 | I5->I6 |
| Ir_3_10 | -2.58 | 0.31 | -14.46 | -5.60 | -6.35 | -2.05 | -0.31 | I3->I4 |
| Ir_3_11 | -6.75 | 0.91 | -12.54 | -1.86 | -6.25 | -4.26 | -0.91 | I3->I4 |
| Ir_3_12 | -2.45 | -1.82 | -10.06 | -1.95 | -6.87 | -7.58 | 1.82 | I3->I4 |
| Ir_3_13 | 5.48 | -4.58 | -3.34 | -9.85 | -2.49 | -15.95 | -5.48 | I2->I3 |
| Ir_3_14 | -4.72 | -1.61 | 14.87 | -31.21 | -3.01 | -5.07 | -14.87 | I4->I5 |
| Ir_3_16 | -6.54 | 3.66 | -17.77 | 2.77 | -14.70 | 1.84 | -3.66 | I3->I4 |
| Ir_3_17 | -5.58 | 5.83 | -18.79 | 1.60 | -10.49 | -3.32 | -5.83 | I3->I4 |
| Ir_3_18 | -5.72 | 4.06 | -11.31 | -6.24 | -11.50 | -0.02 | -4.06 | I3->I4 |

| | | | | | | | | |
|---------|--------|--------|--------|--------|--------|-------|-------|--------|
| Ir_3_19 | -5.46 | 3.34 | -14.28 | -4.66 | -4.49 | -5.20 | -3.34 | I3->I4 |
| Ir_3_20 | -2.81 | 2.09 | -5.28 | -5.41 | -11.20 | -8.13 | -2.09 | I3->I4 |
| Ir_3_21 | 3.97 | -12.77 | -0.57 | -5.64 | -8.44 | -7.29 | -3.97 | I2->I3 |
| Ir_3_22 | 2.70 | -0.88 | -3.41 | -11.67 | -10.60 | -6.87 | -2.70 | I2->I3 |
| Ir_4_0 | -10.69 | 3.22 | -15.21 | -1.38 | -11.25 | 4.57 | -4.57 | I7->I2 |
| Ir_4_1 | -4.04 | -1.78 | -14.08 | 0.70 | -12.63 | 1.08 | -1.08 | I7->I2 |
| Ir_4_2 | -9.14 | 4.44 | -13.79 | -9.12 | -7.89 | 4.76 | -4.76 | I7->I2 |
| Ir_4_3 | -5.95 | 2.24 | -9.84 | -4.94 | -10.48 | -1.77 | -2.24 | I3->I4 |
| Ir_4_4 | -9.38 | 2.22 | -11.76 | -0.70 | -9.85 | -1.28 | -2.22 | I3->I4 |
| Ir_4_5 | -5.24 | -3.42 | -13.14 | -1.00 | -9.50 | 1.56 | -1.56 | I7->I2 |
| Ir_4_6 | -8.85 | 5.87 | -18.65 | -0.44 | -7.98 | -0.69 | -5.87 | I3->I4 |
| Ir_4_7 | 6.33 | -10.64 | -6.24 | -7.12 | -7.01 | -6.07 | -6.33 | I2->I3 |
| Ir_4_8 | -10.92 | 2.70 | -11.64 | -1.03 | -13.19 | 3.35 | -3.35 | I7->I2 |
| Ir_4_9 | -11.04 | 5.00 | -12.48 | -4.30 | -9.86 | 1.94 | -5.00 | I3->I4 |
| Ir_4_10 | -9.56 | 0.87 | -12.20 | -0.36 | -12.57 | 3.07 | -3.07 | I7->I2 |
| Ir_4_11 | -10.99 | 1.68 | -14.02 | 4.66 | -8.28 | -3.79 | -4.66 | I5->I6 |
| Ir_4_12 | -8.92 | 1.79 | -13.92 | -0.84 | -9.02 | 0.17 | -1.79 | I3->I4 |
| Ir_4_13 | -1.21 | -5.53 | 1.17 | -17.69 | 0.23 | -7.71 | -1.17 | I4->I5 |
| Ir_4_14 | -8.68 | 4.00 | -16.42 | -0.05 | -9.84 | 0.25 | -4.00 | I3->I4 |
| Ir_4_16 | -11.24 | 1.87 | -16.69 | 7.79 | -13.29 | 0.81 | -7.79 | I5->I6 |
| Ir_4_17 | -14.02 | 4.52 | -15.35 | 3.20 | -8.14 | -0.96 | -4.52 | I3->I4 |
| Ir_4_18 | -10.12 | 4.31 | -19.04 | 4.17 | -7.54 | -2.53 | -4.31 | I3->I4 |
| Ir_4_19 | -9.54 | 1.94 | -17.80 | 8.12 | -10.38 | -3.08 | -8.12 | I5->I6 |
| Ir_4_20 | -8.69 | 7.92 | -16.39 | -4.04 | -5.58 | -3.97 | -7.92 | I3->I4 |
| Ir_4_21 | -6.23 | -1.31 | -9.14 | 0.56 | -14.41 | -0.20 | -0.56 | I5->I6 |
| Ir_4_22 | 1.75 | 0.03 | -6.59 | -16.06 | -0.89 | -8.98 | -1.75 | I2->I3 |
| Ir_5_0 | -9.08 | 2.06 | -16.28 | -0.35 | -11.91 | 4.83 | -4.83 | I7->I2 |
| Ir_5_1 | -6.00 | -1.93 | -7.98 | -9.29 | -9.64 | 4.10 | -4.10 | I7->I2 |
| Ir_5_2 | -1.81 | -3.43 | -9.22 | -6.21 | -10.81 | 0.74 | -0.74 | I7->I2 |
| Ir_5_3 | -0.57 | -3.71 | -4.99 | -13.05 | -10.26 | 1.83 | -1.83 | I7->I2 |
| Ir_5_4 | -8.99 | 3.34 | -17.01 | 0.34 | -5.82 | -2.61 | -3.34 | I3->I4 |
| Ir_5_5 | -3.47 | -2.50 | -12.89 | 2.92 | -10.88 | -3.93 | -2.92 | I5->I6 |
| Ir_5_6 | -15.43 | 1.39 | -7.31 | -8.27 | -4.43 | 3.31 | -3.31 | I7->I2 |
| Ir_5_7 | 7.06 | -0.87 | -4.22 | -16.87 | -8.99 | -6.84 | -7.06 | I2->I3 |
| Ir_5_8 | -9.07 | 3.14 | -15.53 | 0.02 | -12.37 | 3.07 | -3.14 | I3->I4 |
| Ir_5_9 | -10.97 | 4.23 | -13.40 | 1.75 | -13.73 | 1.37 | -4.23 | I3->I4 |
| Ir_5_10 | -13.43 | 4.15 | -16.62 | 3.03 | -13.07 | 5.20 | -5.20 | I7->I2 |
| Ir_5_11 | -10.49 | 3.90 | -17.10 | -0.06 | -8.45 | 1.45 | -3.90 | I3->I4 |
| Ir_5_12 | -8.81 | 5.53 | -19.08 | 0.73 | -7.34 | -1.78 | -5.53 | I3->I4 |
| Ir_5_13 | 2.72 | -11.45 | -22.84 | 9.79 | -6.52 | -2.44 | -9.79 | I5->I6 |
| Ir_5_14 | -6.89 | 3.20 | -14.52 | -2.28 | -10.58 | 0.33 | -3.20 | I3->I4 |
| Ir_5_16 | -8.15 | 5.00 | -20.68 | 5.71 | -9.59 | -3.04 | -5.71 | I5->I6 |
| Ir_5_17 | -12.54 | 1.48 | -10.59 | 1.18 | -11.54 | 1.27 | -1.48 | I3->I4 |
| Ir_5_18 | -13.33 | 2.15 | -10.94 | 2.80 | -10.98 | -0.44 | -2.80 | I5->I6 |
| Ir_5_19 | -9.66 | 4.19 | -18.28 | 2.72 | -5.73 | -3.97 | -4.19 | I3->I4 |
| Ir_5_20 | -10.78 | 4.45 | -11.91 | -3.08 | -6.79 | -2.62 | -4.45 | I3->I4 |
| Ir_5_21 | -7.41 | 2.35 | -15.38 | -3.85 | -8.30 | 1.85 | -2.35 | I3->I4 |
| Ir_5_22 | 0.34 | -7.01 | -1.85 | -11.16 | -8.60 | -2.45 | -0.34 | I2->I3 |
| Ir_6_0 | -9.36 | 1.33 | -13.05 | -1.73 | -10.52 | 2.60 | -2.60 | I7->I2 |
| Ir_6_1 | -2.09 | -2.09 | -12.83 | 1.48 | -17.64 | 2.42 | -2.42 | I7->I2 |
| Ir_6_2 | -0.17 | -7.15 | -5.78 | -8.59 | -11.87 | 2.82 | -2.82 | I7->I2 |
| Ir_6_3 | 5.23 | -2.54 | -17.91 | 0.84 | -10.80 | -5.56 | -5.23 | I2->I3 |
| Ir_6_4 | -9.04 | 1.11 | -10.86 | -1.08 | -8.18 | -2.69 | -1.11 | I3->I4 |
| Ir_6_5 | -9.33 | 4.96 | -17.69 | 1.48 | -6.95 | -3.19 | -4.96 | I3->I4 |
| Ir_6_6 | -8.30 | 3.63 | -12.98 | 1.57 | -10.97 | -3.68 | -3.63 | I3->I4 |
| Ir_6_7 | 4.66 | 2.30 | -4.85 | -16.14 | -7.58 | -9.13 | -4.66 | I2->I3 |
| Ir_6_8 | -1.62 | -6.20 | -13.79 | 1.75 | -9.78 | -1.09 | -1.75 | I5->I6 |
| Ir_6_9 | -5.45 | -1.63 | -11.31 | -3.00 | -5.49 | -3.86 | 1.63 | I3->I4 |
| Ir_6_10 | -7.48 | -2.63 | -10.55 | -0.85 | -12.50 | 3.29 | -3.29 | I7->I2 |
| Ir_6_11 | -4.67 | 2.46 | -15.61 | -5.48 | -1.85 | -5.59 | -2.46 | I3->I4 |

| | | | | | | | | |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| Ir_6_12 | -9.37 | -1.76 | -17.56 | 8.22 | -15.38 | 5.12 | -8.22 | I5->I6 |
| Ir_6_13 | 1.07 | -5.57 | -13.75 | 1.47 | -14.33 | 0.38 | -1.47 | I5->I6 |
| Ir_6_14 | -8.88 | 5.93 | -20.69 | 5.13 | -13.98 | 1.76 | -5.93 | I3->I4 |
| Ir_6_15 | 10.54 | -18.67 | -9.87 | -0.88 | -2.33 | -9.54 | -10.54 | I2->I3 |
| Ir_6_16 | -7.53 | -2.34 | -16.46 | 2.11 | -5.90 | -0.61 | -2.11 | I5->I6 |
| Ir_6_17 | -9.19 | 2.27 | -16.47 | -1.39 | -0.72 | -5.24 | -2.27 | I3->I4 |
| Ir_6_18 | -14.08 | 7.14 | -21.20 | 0.87 | -7.18 | 3.71 | -7.14 | I3->I4 |
| Ir_6_19 | -11.21 | 7.44 | -19.94 | 5.47 | -14.86 | 2.36 | -7.44 | I3->I4 |
| Ir_6_20 | -8.63 | 5.03 | -21.75 | 7.91 | -13.53 | 0.24 | -7.91 | I5->I6 |
| Ir_6_21 | -0.92 | -4.75 | -9.08 | -3.44 | -17.80 | 5.25 | -5.25 | I7->I2 |
| Ir_6_22 | -5.91 | 1.37 | -6.81 | -12.86 | -5.78 | -0.76 | -1.37 | I3->I4 |
| Ir_7_0 | -3.52 | -2.85 | -14.97 | 2.40 | -11.07 | -0.73 | -2.40 | I5->I6 |
| Ir_7_1 | 0.96 | -2.02 | -10.45 | -7.97 | -6.55 | -4.71 | -0.96 | I2->I3 |
| Ir_7_2 | -4.66 | -7.26 | -9.44 | -2.75 | -4.33 | -2.30 | 2.30 | I7->I2 |
| Ir_7_3 | 19.31 | -9.85 | -3.75 | -18.34 | 1.10 | -19.22 | -19.31 | I2->I3 |
| Ir_7_4 | -9.97 | 1.40 | -6.21 | -6.98 | -13.23 | 4.26 | -4.26 | I7->I2 |
| Ir_7_5 | -1.73 | 3.79 | -12.21 | -12.25 | -6.15 | -2.19 | -3.79 | I3->I4 |
| Ir_7_6 | -5.48 | 0.97 | -7.62 | -2.00 | -16.13 | -0.49 | -0.97 | I3->I4 |
| Ir_7_8 | 9.88 | -10.57 | -2.84 | -8.83 | -9.40 | -8.99 | -9.88 | I2->I3 |
| Ir_7_9 | 8.37 | -7.81 | -9.16 | -7.67 | -5.94 | -8.53 | -8.37 | I2->I3 |
| Ir_7_10 | -3.40 | 4.48 | -11.51 | -6.35 | -10.02 | -3.94 | -4.48 | I3->I4 |
| Ir_7_11 | 3.31 | -6.69 | -9.20 | -4.52 | -7.68 | -5.97 | -3.31 | I2->I3 |
| Ir_7_12 | 0.59 | 5.29 | -15.94 | -2.95 | -13.45 | -4.28 | -5.29 | I3->I4 |
| Ir_7_14 | 1.92 | -9.20 | -3.90 | -10.88 | -9.55 | 0.87 | -1.92 | I2->I3 |
| Ir_7_16 | 2.91 | -2.71 | -14.94 | -6.08 | -1.85 | -8.08 | -2.91 | I2->I3 |
| Ir_7_17 | 1.40 | -3.47 | -7.32 | -11.01 | -1.63 | -8.71 | -1.40 | I2->I3 |
| Ir_7_18 | -0.46 | -0.98 | -12.46 | -5.79 | -1.44 | -9.60 | 0.46 | I2->I3 |
| Ir_7_21 | 7.12 | 3.51 | -17.55 | -7.62 | -4.70 | -11.50 | -7.12 | I2->I3 |
| Ir_7_22 | 5.28 | -3.56 | -12.58 | -5.95 | -9.38 | -4.56 | -5.28 | I2->I3 |
| Ir_8_0 | -9.58 | 1.39 | -14.53 | 1.36 | -11.36 | 1.98 | -1.98 | I7->I2 |
| Ir_8_1 | -5.65 | -3.62 | -15.14 | 2.48 | -8.82 | 0.01 | -2.48 | I5->I6 |
| Ir_8_2 | 1.05 | -3.81 | -7.89 | -10.72 | -8.02 | -1.35 | -1.05 | I2->I3 |
| Ir_8_3 | -7.87 | -1.19 | -17.04 | 3.00 | -3.38 | -4.27 | -3.00 | I5->I6 |
| Ir_8_4 | -9.28 | -0.86 | -13.52 | 6.61 | -12.54 | -1.15 | -6.61 | I5->I6 |
| Ir_8_5 | -4.54 | -0.72 | -11.23 | -3.49 | -6.62 | -4.13 | 0.72 | I3->I4 |
| Ir_8_6 | -9.01 | 5.10 | -18.96 | 4.91 | -11.37 | -1.42 | -5.10 | I3->I4 |
| Ir_8_7 | 15.03 | -5.89 | -1.78 | -28.49 | 18.14 | -27.75 | -18.14 | I6->I7 |
| Ir_8_8 | -7.77 | 0.99 | -16.47 | 3.99 | -10.72 | -0.77 | -3.99 | I5->I6 |
| Ir_8_9 | -7.86 | 1.31 | -9.22 | -7.01 | -7.87 | -0.09 | -1.31 | I3->I4 |
| Ir_8_10 | -7.67 | 3.54 | -18.24 | 3.06 | -8.59 | -2.85 | -3.54 | I3->I4 |
| Ir_8_11 | -9.90 | 4.09 | -16.03 | 0.46 | -7.29 | -2.07 | -4.09 | I3->I4 |
| Ir_8_12 | -7.72 | 2.95 | -18.95 | 2.75 | -9.79 | 0.01 | -2.95 | I3->I4 |
| Ir_8_13 | -0.52 | -0.12 | -10.48 | -3.63 | -2.57 | -13.40 | 0.12 | I3->I4 |
| Ir_8_14 | -9.41 | 5.47 | -20.31 | 3.75 | -10.28 | 0.05 | -5.47 | I3->I4 |
| Ir_8_15 | 2.94 | -1.22 | -11.94 | -5.85 | -2.38 | -12.29 | -2.94 | I2->I3 |
| Ir_8_16 | -12.00 | 1.26 | -10.10 | -5.34 | -7.38 | 2.82 | -2.82 | I7->I2 |
| Ir_8_17 | -11.42 | 6.97 | -21.44 | 8.49 | -9.18 | -4.16 | -8.49 | I5->I6 |
| Ir_8_18 | -10.57 | 0.35 | -14.14 | 1.95 | -4.86 | -3.46 | -1.95 | I5->I6 |
| Ir_8_19 | -10.94 | 0.91 | -12.42 | 0.14 | -5.46 | -2.97 | -0.91 | I3->I4 |
| Ir_8_20 | -6.56 | -1.79 | -16.44 | 3.03 | -6.51 | -2.47 | -3.03 | I5->I6 |
| Ir_8_21 | -3.98 | -4.35 | -10.64 | -7.20 | -0.50 | -4.06 | 0.50 | I6->I7 |
| Ir_8_22 | -4.79 | -3.93 | -10.91 | -5.94 | -3.98 | -1.21 | 1.21 | I7->I2 |
| Ir_9_0 | -10.30 | 0.13 | -11.73 | -2.24 | -8.84 | 2.24 | -2.24 | I7->I2 |
| Ir_9_1 | -3.81 | -3.03 | -13.05 | 0.25 | -11.14 | 0.04 | -0.25 | I5->I6 |
| Ir_9_2 | -0.71 | -1.21 | -10.81 | -5.01 | -9.37 | -3.63 | 0.71 | I2->I3 |
| Ir_9_3 | -0.35 | -1.62 | -8.46 | -7.03 | -10.61 | -2.67 | 0.35 | I2->I3 |
| Ir_9_4 | -9.84 | 2.95 | -15.54 | -0.72 | -8.42 | 0.82 | -2.95 | I3->I4 |
| Ir_9_5 | -7.86 | 3.15 | -14.81 | 1.71 | -11.87 | -1.07 | -3.15 | I3->I4 |
| Ir_9_6 | 3.51 | -5.21 | -21.32 | 2.79 | -8.24 | -2.26 | -3.51 | I2->I3 |
| Ir_9_8 | -9.72 | 4.54 | -18.80 | 2.05 | -8.12 | -0.69 | -4.54 | I3->I4 |

| | | | | | | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|
| Ir_9_9 | -8.98 | 4.35 | -15.38 | -2.67 | -8.01 | -0.06 | -4.35 | I3->I4 |
| Ir_9_10 | -11.92 | 4.84 | -12.01 | -3.16 | -11.18 | 2.68 | -4.84 | I3->I4 |
| Ir_9_11 | -11.81 | 5.24 | -18.98 | 4.40 | -9.74 | 0.15 | -5.24 | I3->I4 |
| Ir_9_12 | -8.66 | 3.25 | -17.35 | 2.17 | -9.78 | -0.37 | -3.25 | I3->I4 |
| Ir_9_13 | -5.31 | 0.77 | -11.06 | 3.30 | -11.54 | -6.90 | -3.30 | I5->I6 |
| Ir_9_14 | -9.37 | 5.40 | -20.23 | 3.57 | -10.62 | 0.51 | -5.40 | I3->I4 |
| Ir_9_15 | -2.00 | -5.15 | -12.93 | -1.74 | -1.71 | -7.21 | 1.71 | I6->I7 |
| Ir_9_16 | -7.67 | -0.29 | -12.95 | 3.27 | -10.99 | -2.13 | -3.27 | I5->I6 |
| Ir_9_17 | -13.48 | 5.57 | -16.93 | 0.92 | -3.35 | -3.47 | -5.57 | I3->I4 |
| Ir_9_18 | -11.18 | 6.89 | -14.48 | -0.04 | -11.93 | 0.00 | -6.89 | I3->I4 |
| Ir_9_19 | -11.22 | 2.82 | -8.14 | -9.23 | -4.69 | -0.28 | -2.82 | I3->I4 |
| Ir_9_20 | -7.82 | 5.27 | -17.25 | -1.19 | -7.72 | -2.03 | -5.27 | I3->I4 |
| Ir_9_21 | -7.24 | 0.97 | -6.25 | -5.56 | -13.58 | 0.92 | -0.97 | I3->I4 |
| Ir_9_22 | -1.40 | -9.40 | 1.66 | -15.12 | -3.84 | -2.64 | -1.66 | I4->I5 |
| Ir_10_0 | -9.47 | 2.71 | -14.86 | 0.41 | -9.03 | -0.49 | -2.71 | I3->I4 |
| Ir_10_1 | -5.35 | -2.68 | -14.67 | -1.01 | -8.44 | 1.42 | -1.42 | I7->I2 |
| Ir_10_2 | -4.39 | 0.99 | -9.15 | -9.76 | -4.97 | -3.45 | -0.99 | I3->I4 |
| Ir_10_3 | 3.71 | -0.03 | -7.94 | -5.87 | -4.03 | -16.57 | -3.71 | I2->I3 |
| Ir_10_4 | -9.09 | 5.64 | -21.09 | 2.57 | -11.30 | 2.54 | -5.64 | I3->I4 |
| Ir_10_5 | -8.51 | 0.39 | -11.55 | 2.80 | -11.88 | -1.99 | -2.80 | I5->I6 |
| Ir_10_6 | -7.14 | -1.15 | -11.63 | 3.11 | -13.48 | -0.45 | -3.11 | I5->I6 |
| Ir_10_8 | -7.73 | 2.66 | -16.67 | 1.47 | -10.28 | -0.18 | -2.66 | I3->I4 |
| Ir_10_9 | -8.77 | 3.54 | -17.22 | 1.75 | -7.83 | -2.20 | -3.54 | I3->I4 |
| Ir_10_10 | -8.53 | 1.18 | -15.79 | 3.07 | -11.29 | 0.62 | -3.07 | I5->I6 |
| Ir_10_11 | -9.94 | 4.12 | -17.61 | 3.38 | -11.39 | 0.71 | -4.12 | I3->I4 |
| Ir_10_12 | -8.22 | 1.86 | -16.51 | 2.67 | -9.80 | -0.75 | -2.67 | I5->I6 |
| Ir_10_13 | -3.20 | 7.15 | -12.40 | -8.47 | -0.99 | -12.84 | -7.15 | I3->I4 |
| Ir_10_14 | -10.48 | 7.15 | -20.94 | 4.09 | -8.59 | -1.96 | -7.15 | I3->I4 |
| Ir_10_15 | 6.37 | -4.67 | -7.05 | -10.41 | 5.37 | -20.36 | -6.37 | I2->I3 |
| Ir_10_16 | -9.58 | 3.41 | -8.68 | -4.07 | -9.66 | -2.17 | -3.41 | I3->I4 |
| Ir_10_17 | -12.60 | 2.99 | -12.17 | -4.01 | -7.11 | 2.15 | -2.99 | I3->I4 |
| Ir_10_18 | -14.13 | 3.58 | -11.20 | 0.20 | -12.96 | 3.77 | -3.77 | I7->I2 |
| Ir_10_19 | -12.90 | 3.60 | -14.90 | -0.03 | -6.50 | 0.00 | -3.60 | I3->I4 |
| Ir_10_20 | -5.87 | 1.17 | -13.45 | -0.75 | -10.57 | -1.27 | -1.17 | I3->I4 |
| Ir_10_21 | -6.45 | 6.16 | -13.41 | -2.79 | -14.88 | 0.63 | -6.16 | I3->I4 |
| Ir_10_22 | 0.47 | -7.54 | -3.73 | -11.48 | -6.31 | -2.16 | -0.47 | I2->I3 |
| Ir_11_0 | -10.45 | 3.89 | -17.65 | 2.17 | -9.91 | 1.22 | -3.89 | I3->I4 |
| Ir_11_1 | -5.17 | -1.81 | -11.22 | -2.91 | -10.55 | 0.94 | -0.94 | I7->I2 |
| Ir_11_2 | -3.68 | 3.13 | -8.51 | -11.07 | -6.12 | -4.49 | -3.13 | I3->I4 |
| Ir_11_3 | -3.51 | -4.07 | -6.85 | -9.11 | -5.24 | -1.96 | 1.96 | I7->I2 |
| Ir_11_4 | -10.92 | 1.36 | -16.93 | 4.92 | -10.43 | 1.27 | -4.92 | I5->I6 |
| Ir_11_5 | -8.67 | 3.09 | -13.31 | -4.55 | -7.22 | -0.08 | -3.09 | I3->I4 |
| Ir_11_6 | -12.04 | 4.39 | -15.37 | -1.32 | -8.23 | 1.83 | -4.39 | I3->I4 |
| Ir_11_7 | 7.28 | -17.13 | 14.23 | -29.25 | 2.13 | -8.00 | -14.23 | I4->I5 |
| Ir_11_8 | -8.14 | 3.88 | -19.25 | 6.17 | -12.89 | -0.50 | -6.17 | I5->I6 |
| Ir_11_9 | -11.00 | 6.40 | -19.22 | 0.14 | -5.37 | -1.70 | -6.40 | I3->I4 |
| Ir_11_10 | -10.07 | 4.69 | -12.75 | -3.84 | -6.31 | -2.45 | -4.69 | I3->I4 |
| Ir_11_11 | -10.93 | 3.14 | -17.27 | 2.16 | -7.56 | -0.28 | -3.14 | I3->I4 |
| Ir_11_12 | -7.97 | 5.88 | -18.40 | 0.26 | -9.14 | -1.37 | -5.88 | I3->I4 |
| Ir_11_13 | -0.16 | -0.90 | -10.88 | -1.08 | -4.42 | -13.29 | 0.16 | I2->I3 |
| Ir_11_14 | -10.52 | 3.64 | -17.09 | 2.48 | -6.02 | -3.23 | -3.64 | I3->I4 |
| Ir_11_15 | 4.50 | -5.05 | -11.70 | 13.77 | -22.38 | -9.88 | -13.77 | I5->I6 |
| Ir_11_16 | -12.61 | 2.30 | -13.01 | -0.42 | -7.79 | 0.79 | -2.30 | I3->I4 |
| Ir_11_17 | -12.69 | 3.03 | -12.76 | -2.52 | -1.33 | -4.47 | -3.03 | I3->I4 |
| Ir_11_18 | -10.65 | 10.00 | -17.52 | -5.41 | -6.74 | -0.43 | -10.00 | I3->I4 |
| Ir_11_19 | -10.15 | 3.88 | -12.73 | -2.64 | -4.35 | -4.75 | -3.88 | I3->I4 |
| Ir_11_20 | -10.28 | 2.91 | -13.74 | 3.62 | -12.65 | -0.60 | -3.62 | I5->I6 |
| Ir_11_21 | -6.30 | 5.55 | -11.51 | -5.21 | -11.22 | -2.06 | -5.55 | I3->I4 |
| Ir_11_22 | 2.51 | -7.30 | -11.89 | -4.09 | -4.86 | -5.10 | -2.51 | I2->I3 |
| Ir_12_0 | -9.51 | 0.93 | -13.27 | -0.42 | -11.28 | 2.80 | -2.80 | I7->I2 |

| | | | | | | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|
| Ir_12_1 | -7.87 | 2.47 | -12.33 | -6.11 | -6.36 | -0.53 | -2.47 | I3->I4 |
| Ir_12_2 | -2.64 | 0.74 | -11.10 | -0.49 | -11.62 | -5.63 | -0.74 | I3->I4 |
| Ir_12_3 | 1.13 | -5.35 | -13.06 | -0.98 | -8.71 | -3.77 | -1.13 | I2->I3 |
| Ir_12_4 | -10.23 | 4.91 | -20.08 | 0.24 | -4.19 | -1.40 | -4.91 | I3->I4 |
| Ir_12_5 | -7.72 | 1.61 | -12.21 | -2.95 | -8.86 | -0.62 | -1.61 | I3->I4 |
| Ir_12_6 | -7.29 | -0.86 | -12.72 | -3.88 | -6.39 | 0.40 | -0.40 | I7->I2 |
| Ir_12_7 | 13.40 | -4.58 | -4.60 | -19.19 | 3.37 | -19.14 | -13.40 | I2->I3 |
| Ir_12_8 | -9.15 | 2.87 | -17.40 | 2.17 | -9.15 | -0.08 | -2.87 | I3->I4 |
| Ir_12_9 | -8.65 | 1.17 | -15.75 | 1.62 | -9.58 | 0.45 | -1.62 | I5->I6 |
| Ir_12_10 | -9.14 | 4.19 | -13.74 | -1.79 | -8.57 | -1.68 | -4.19 | I3->I4 |
| Ir_12_11 | -11.90 | 5.81 | -12.88 | -2.51 | -10.45 | 1.19 | -5.81 | I3->I4 |
| Ir_12_12 | -10.56 | 5.34 | -19.89 | 3.39 | -10.01 | 0.99 | -5.34 | I3->I4 |
| Ir_12_13 | -3.82 | -6.24 | 4.25 | -15.72 | -2.74 | -6.47 | -4.25 | I4->I5 |
| Ir_12_14 | -6.25 | 0.34 | -17.79 | 6.73 | -9.93 | -3.84 | -6.73 | I5->I6 |
| Ir_12_15 | 6.60 | -8.00 | -3.02 | -15.07 | -4.77 | -6.49 | -6.60 | I2->I3 |
| Ir_12_16 | -11.38 | 3.64 | -13.70 | -3.36 | -4.30 | -1.64 | -3.64 | I3->I4 |
| Ir_12_17 | -10.10 | 4.91 | -12.92 | 1.90 | -14.57 | 0.05 | -4.91 | I3->I4 |
| Ir_12_18 | -9.67 | 2.77 | -12.88 | 1.06 | -15.56 | 3.54 | -3.54 | I7->I2 |
| Ir_12_19 | -14.03 | 5.28 | -19.23 | 4.43 | -9.42 | 2.23 | -5.28 | I3->I4 |
| Ir_12_20 | -7.49 | 0.49 | -13.33 | -2.21 | -4.87 | -3.33 | -0.49 | I3->I4 |
| Ir_12_21 | -10.11 | -2.46 | -8.56 | -2.20 | -7.15 | -0.25 | 0.25 | I7->I2 |
| Ir_12_22 | 0.09 | -5.13 | -15.31 | -4.48 | -2.67 | -3.24 | -0.09 | I2->I3 |
| Ir_13_0 | -3.83 | -5.72 | -7.87 | -8.20 | -5.94 | 0.83 | -0.83 | I7->I2 |
| Ir_13_1 | -8.25 | 3.16 | -4.94 | -17.89 | 4.63 | -7.44 | -4.63 | I6->I7 |
| Ir_13_2 | 5.48 | -7.12 | -12.98 | -7.53 | -1.89 | -6.70 | -5.48 | I2->I3 |
| Ir_13_4 | -12.25 | 2.76 | -13.49 | 0.48 | -7.69 | -0.54 | -2.76 | I3->I4 |
| Ir_13_5 | -10.66 | -1.64 | 1.33 | -13.26 | -1.38 | -5.13 | -1.33 | I4->I5 |
| Ir_13_6 | -2.58 | -0.45 | 0.13 | -10.92 | -2.74 | -14.19 | -0.13 | I4->I5 |
| Ir_13_8 | -9.24 | -1.80 | -13.49 | -1.51 | -4.94 | 0.24 | -0.24 | I7->I2 |
| Ir_13_9 | -4.46 | -1.02 | -13.44 | -1.37 | -7.20 | -3.25 | 1.02 | I3->I4 |
| Ir_13_10 | -2.53 | -0.01 | -9.92 | -0.87 | -9.38 | -8.02 | 0.01 | I3->I4 |
| Ir_13_11 | -6.40 | -3.59 | -10.98 | 1.47 | -8.11 | -3.13 | -1.47 | I5->I6 |
| Ir_13_12 | -4.83 | -2.95 | -13.95 | -0.73 | -4.44 | -3.85 | 0.73 | I5->I6 |
| Ir_13_13 | 0.46 | -8.60 | 0.09 | -3.52 | -7.42 | -11.76 | -0.46 | I2->I3 |
| Ir_13_14 | -2.65 | 1.29 | -16.42 | -2.86 | -5.70 | -4.40 | -1.29 | I3->I4 |
| Ir_13_16 | -6.04 | 4.04 | -15.78 | -6.69 | -2.95 | -3.32 | -4.04 | I3->I4 |
| Ir_13_17 | -10.82 | 3.32 | -7.60 | -9.59 | -1.04 | -5.01 | -3.32 | I3->I4 |
| Ir_13_18 | -6.23 | 1.06 | -13.80 | 0.26 | -8.63 | -3.40 | -1.06 | I3->I4 |
| Ir_13_19 | -8.02 | 5.33 | -13.72 | -1.72 | -6.76 | -5.85 | -5.33 | I3->I4 |
| Ir_13_20 | -2.84 | -1.68 | -10.98 | -1.92 | -7.41 | -5.91 | 1.68 | I3->I4 |
| Ir_13_21 | -3.99 | -2.57 | -7.55 | -9.92 | -4.68 | -2.02 | 2.02 | I7->I2 |
| Ir_13_22 | 3.96 | -7.09 | -3.60 | -6.50 | -8.29 | -9.22 | -3.96 | I2->I3 |
| Ir_14_0 | -10.27 | 1.76 | -15.14 | 0.49 | -9.37 | 1.79 | -1.79 | I7->I2 |
| Ir_14_1 | -7.59 | 2.49 | -9.05 | -6.42 | -10.00 | -0.17 | -2.49 | I3->I4 |
| Ir_14_2 | -7.30 | 5.57 | -15.76 | -4.40 | -2.29 | -6.56 | -5.57 | I3->I4 |
| Ir_14_3 | -4.39 | -0.50 | -4.17 | -9.32 | -4.61 | -7.75 | 0.50 | I3->I4 |
| Ir_14_4 | -7.78 | 3.79 | -15.98 | -2.45 | -6.50 | -1.80 | -3.79 | I3->I4 |
| Ir_14_5 | -5.73 | 2.71 | -14.44 | -1.62 | -8.95 | -2.71 | -2.71 | I3->I4 |
| Ir_14_6 | -7.55 | 0.44 | -11.82 | 0.62 | -11.61 | -0.82 | -0.62 | I5->I6 |
| Ir_14_7 | 6.83 | -0.50 | -12.00 | -13.30 | -1.92 | -9.84 | -6.83 | I2->I3 |
| Ir_14_8 | -8.13 | 2.86 | -18.57 | 3.67 | -7.69 | -2.86 | -3.67 | I5->I6 |
| Ir_14_9 | -7.47 | 2.64 | -15.42 | -0.44 | -9.83 | -0.22 | -2.64 | I3->I4 |
| Ir_14_10 | -7.74 | 4.11 | -20.97 | 3.11 | -4.36 | -4.89 | -4.11 | I3->I4 |
| Ir_14_11 | -10.48 | 4.39 | -18.63 | 6.18 | -9.47 | -2.73 | -6.18 | I5->I6 |
| Ir_14_12 | -8.14 | 3.81 | -19.44 | 1.41 | -5.93 | -2.45 | -3.81 | I3->I4 |
| Ir_14_13 | 5.81 | -10.60 | -6.04 | -1.33 | -12.37 | -6.21 | -5.81 | I2->I3 |
| Ir_14_14 | -9.13 | 9.42 | -19.64 | -0.08 | -10.33 | -0.98 | -9.42 | I3->I4 |
| Ir_14_15 | 2.79 | -8.97 | -2.87 | -11.01 | -6.23 | -4.46 | -2.79 | I2->I3 |
| Ir_14_16 | -9.21 | 1.71 | -10.70 | -3.58 | -8.08 | -0.87 | -1.71 | I3->I4 |
| Ir_14_17 | -13.06 | 8.76 | -19.12 | 0.90 | -5.41 | -2.82 | -8.76 | I3->I4 |

| | | | | | | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|
| Ir_14_18 | -9.62 | 2.72 | -13.93 | -2.80 | -7.09 | -0.02 | -2.72 | I3->I4 |
| Ir_14_19 | -10.99 | 5.80 | -15.39 | -2.25 | -7.60 | -0.31 | -5.80 | I3->I4 |
| Ir_14_20 | -6.62 | 3.49 | -16.07 | 1.36 | -12.37 | -0.53 | -3.49 | I3->I4 |
| Ir_14_21 | -6.07 | 5.37 | -16.06 | -3.67 | -6.05 | -4.25 | -5.37 | I3->I4 |
| Ir_14_22 | -4.52 | -3.61 | -6.53 | -8.34 | -4.65 | -3.09 | 3.09 | I7->I2 |
| Ir_15_0 | -12.54 | 1.72 | -13.58 | -3.42 | -2.41 | -0.50 | -1.72 | I3->I4 |
| Ir_15_1 | -7.54 | -0.95 | -7.69 | -11.58 | -6.89 | 3.90 | -3.90 | I7->I2 |
| Ir_15_2 | -10.07 | 9.07 | -12.09 | -12.95 | -8.96 | 4.26 | -9.07 | I3->I4 |
| Ir_15_4 | -15.14 | -0.62 | -14.40 | 2.62 | -11.70 | 8.49 | -8.49 | I7->I2 |
| Ir_15_5 | -4.83 | 3.03 | -12.17 | -3.17 | -1.41 | -12.19 | -3.03 | I3->I4 |
| Ir_15_6 | -4.90 | -2.54 | -7.75 | -6.47 | 1.01 | -10.10 | -1.01 | I6->I7 |
| Ir_15_8 | -10.74 | 3.97 | -14.48 | 3.95 | -13.80 | 0.37 | -3.97 | I3->I4 |
| Ir_15_9 | -3.25 | 4.14 | -15.20 | -9.17 | -4.28 | -2.98 | -4.14 | I3->I4 |
| Ir_15_10 | -7.21 | 3.70 | -12.15 | -1.71 | -11.38 | -1.99 | -3.70 | I3->I4 |
| Ir_15_11 | -3.83 | -2.23 | -9.39 | -5.59 | -5.27 | -4.43 | 2.23 | I3->I4 |
| Ir_15_12 | -6.58 | 3.12 | -4.78 | -9.29 | -10.26 | -2.95 | -3.12 | I3->I4 |
| Ir_15_13 | 5.82 | -21.42 | 5.69 | -13.44 | -3.34 | -4.05 | -5.82 | I2->I3 |
| Ir_15_14 | -4.75 | 7.03 | -9.87 | -15.03 | -5.22 | -2.89 | -7.03 | I3->I4 |
| Ir_15_16 | -7.86 | 9.73 | -6.59 | -16.60 | -7.55 | -1.88 | -9.73 | I3->I4 |
| Ir_15_17 | -4.72 | -1.43 | -4.04 | -4.88 | -10.58 | -5.10 | 1.43 | I3->I4 |
| Ir_15_18 | -14.99 | 0.36 | -13.00 | 2.42 | -9.11 | 3.57 | -3.57 | I7->I2 |
| Ir_15_19 | -10.14 | 7.37 | -13.55 | 8.63 | -19.18 | -3.86 | -8.63 | I5->I6 |
| Ir_15_20 | -1.44 | -1.49 | -17.22 | 0.26 | -9.83 | -1.01 | -0.26 | I5->I6 |
| Ir_15_21 | -3.19 | -4.88 | 0.81 | -10.71 | 1.01 | -13.77 | -1.01 | I6->I7 |
| Ir_15_22 | 10.25 | -11.80 | -9.10 | -4.95 | -11.14 | -4.00 | -10.25 | I2->I3 |
| Ir_16_0 | -8.52 | 0.65 | -9.22 | 2.19 | -16.91 | 1.06 | -2.19 | I5->I6 |
| Ir_16_1 | -4.48 | 1.98 | -11.58 | -9.22 | -7.91 | 0.47 | -1.98 | I3->I4 |
| Ir_16_2 | -0.91 | 0.80 | -11.07 | -8.90 | -9.33 | -1.33 | -0.80 | I3->I4 |
| Ir_16_3 | -2.44 | 1.94 | -8.51 | -9.04 | -7.01 | -5.68 | -1.94 | I3->I4 |
| Ir_16_4 | -5.19 | -0.44 | -13.18 | 1.25 | -10.20 | -2.97 | -1.25 | I5->I6 |
| Ir_16_5 | -10.61 | 2.03 | -17.35 | 0.43 | -5.96 | 0.72 | -2.03 | I3->I4 |
| Ir_16_6 | -3.12 | -0.38 | -5.80 | -4.13 | -10.17 | -7.14 | 0.38 | I3->I4 |
| Ir_16_7 | 13.68 | -13.74 | 1.86 | -21.46 | -1.27 | -9.82 | -13.68 | I2->I3 |
| Ir_16_8 | -10.60 | 9.31 | -22.21 | 5.68 | -10.82 | -2.10 | -9.31 | I3->I4 |
| Ir_16_9 | -8.25 | 2.34 | -10.19 | -1.78 | -10.86 | -1.99 | -2.34 | I3->I4 |
| Ir_16_10 | -10.58 | 1.61 | -11.48 | 3.80 | -14.60 | 0.51 | -3.80 | I5->I6 |
| Ir_16_11 | -9.62 | 1.97 | -12.36 | -2.75 | -6.58 | -1.40 | -1.97 | I3->I4 |
| Ir_16_12 | -8.96 | 8.12 | -20.81 | 0.91 | -10.69 | 0.70 | -8.12 | I3->I4 |
| Ir_16_13 | -0.52 | -6.50 | -7.97 | 2.46 | -11.08 | -7.14 | -2.46 | I5->I6 |
| Ir_16_14 | -12.69 | 4.18 | -14.83 | 1.23 | -12.27 | 3.64 | -4.18 | I3->I4 |
| Ir_16_16 | -12.99 | 5.28 | -15.61 | 4.80 | -8.83 | -3.39 | -5.28 | I3->I4 |
| Ir_16_17 | -9.66 | 1.92 | -18.31 | 6.56 | -9.55 | -1.69 | -6.56 | I5->I6 |
| Ir_16_18 | -12.09 | 5.51 | -8.49 | -4.95 | -7.32 | -3.41 | -5.51 | I3->I4 |
| Ir_16_19 | -13.47 | 4.05 | -14.27 | 2.69 | -9.09 | -0.65 | -4.05 | I3->I4 |
| Ir_16_20 | -9.81 | 2.68 | -12.21 | 2.24 | -13.32 | -0.32 | -2.68 | I3->I4 |
| Ir_16_21 | 0.78 | -8.37 | -2.60 | -4.69 | -5.29 | -10.58 | -0.78 | I2->I3 |
| Ir_16_22 | -1.11 | -5.98 | -9.73 | 3.58 | -8.15 | -9.35 | -3.58 | I5->I6 |
| Ir_17_0 | -8.89 | 0.97 | -16.41 | 2.03 | -9.01 | 0.57 | -2.03 | I5->I6 |
| Ir_17_1 | -7.30 | 0.31 | -11.95 | 2.33 | -15.19 | 1.04 | -2.33 | I5->I6 |
| Ir_17_2 | -2.02 | -3.45 | -9.89 | -3.54 | -6.97 | -4.85 | 2.02 | I2->I3 |
| Ir_17_3 | -4.94 | -1.41 | -4.34 | -11.00 | -8.42 | -0.63 | 0.63 | I7->I2 |
| Ir_17_4 | -6.65 | 0.16 | -13.77 | 1.81 | -9.74 | -2.54 | -1.81 | I5->I6 |
| Ir_17_5 | -7.16 | -1.00 | -8.46 | -3.47 | -6.15 | -4.50 | 1.00 | I3->I4 |
| Ir_17_6 | -3.52 | -5.57 | -9.03 | -3.74 | -4.29 | -4.58 | 3.52 | I2->I3 |
| Ir_17_7 | 13.21 | -8.57 | -4.07 | -1.64 | -17.83 | -11.85 | -13.21 | I2->I3 |
| Ir_17_8 | -8.75 | 1.97 | -18.71 | 8.96 | -15.43 | 1.22 | -8.96 | I5->I6 |
| Ir_17_9 | -13.18 | -0.04 | -8.64 | -1.05 | -11.90 | 4.07 | -4.07 | I7->I2 |
| Ir_17_10 | -8.04 | 2.38 | -18.08 | 3.74 | -8.69 | -2.06 | -3.74 | I5->I6 |
| Ir_17_11 | -10.07 | 7.85 | -20.00 | 4.18 | -9.76 | -2.94 | -7.85 | I3->I4 |
| Ir_17_12 | -10.06 | 7.73 | -20.11 | 1.64 | -10.19 | 0.25 | -7.73 | I3->I4 |

| | | | | | | | | |
|----------|--------|-------|--------|--------|--------|--------|--------|--------|
| Ir_17_13 | 0.17 | -5.07 | -6.10 | -6.47 | -2.25 | -11.02 | -0.17 | I2->I3 |
| Ir_17_14 | -12.87 | 6.25 | -16.72 | 4.91 | -10.58 | -1.73 | -6.25 | I3->I4 |
| Ir_17_15 | -1.54 | -4.40 | -8.37 | -10.13 | 1.67 | -7.97 | -1.67 | I6->I7 |
| Ir_17_16 | -11.36 | 4.77 | -15.37 | 1.17 | -6.10 | -3.86 | -4.77 | I3->I4 |
| Ir_17_17 | -14.16 | 6.15 | -18.07 | 5.12 | -5.97 | -3.82 | -6.15 | I3->I4 |
| Ir_17_18 | -13.01 | 6.58 | -20.29 | 3.22 | -4.90 | -2.35 | -6.58 | I3->I4 |
| Ir_17_19 | -13.72 | 6.45 | -18.21 | 3.47 | -7.42 | -1.31 | -6.45 | I3->I4 |
| Ir_17_20 | -9.20 | 5.59 | -13.45 | 1.24 | -9.76 | -5.15 | -5.59 | I3->I4 |
| Ir_17_21 | 1.86 | -2.49 | -11.37 | -11.20 | -3.86 | -3.68 | -1.86 | I2->I3 |
| Ir_17_22 | -2.44 | -3.46 | 2.91 | -10.72 | -14.01 | -3.02 | -2.91 | I4->I5 |
| Ir_18_0 | -7.40 | 1.95 | -12.44 | -5.81 | -7.66 | 0.62 | -1.95 | I3->I4 |
| Ir_18_1 | -5.29 | -1.83 | -6.63 | 0.91 | -17.81 | -0.08 | -0.91 | I5->I6 |
| Ir_18_2 | -3.90 | -1.48 | -6.49 | -8.94 | -7.75 | -2.19 | 1.48 | I3->I4 |
| Ir_18_3 | 2.18 | -2.30 | -3.27 | -10.46 | -11.10 | -5.79 | -2.18 | I2->I3 |
| Ir_18_4 | -8.02 | 3.42 | -12.88 | 2.98 | -11.85 | -4.38 | -3.42 | I3->I4 |
| Ir_18_5 | -6.46 | -0.77 | -8.50 | -3.51 | -9.96 | -1.54 | 0.77 | I3->I4 |
| Ir_18_6 | -7.07 | 1.25 | -11.94 | -1.85 | -6.86 | -4.28 | -1.25 | I3->I4 |
| Ir_18_7 | 13.72 | -0.01 | -15.64 | -6.09 | -7.16 | -15.56 | -13.72 | I2->I3 |
| Ir_18_8 | -8.47 | -0.37 | -15.55 | 5.59 | -13.54 | 1.61 | -5.59 | I5->I6 |
| Ir_18_9 | -9.21 | 4.74 | -12.63 | 0.52 | -16.98 | 2.82 | -4.74 | I3->I4 |
| Ir_18_10 | -11.68 | 8.00 | -21.58 | 3.79 | -10.99 | 1.74 | -8.00 | I3->I4 |
| Ir_18_11 | -9.98 | 2.47 | -16.30 | 3.30 | -9.34 | -0.89 | -3.30 | I5->I6 |
| Ir_18_12 | -6.69 | -0.22 | -17.71 | 5.24 | -10.23 | -1.12 | -5.24 | I5->I6 |
| Ir_18_13 | -2.96 | 2.68 | -2.49 | -13.64 | -9.92 | -4.41 | -2.68 | I3->I4 |
| Ir_18_14 | -12.70 | 2.20 | -7.97 | 2.86 | -17.05 | 1.91 | -2.86 | I5->I6 |
| Ir_18_15 | -4.13 | -8.85 | -6.63 | -5.55 | 1.70 | -7.26 | -1.70 | I6->I7 |
| Ir_18_16 | -11.27 | 3.05 | -15.35 | 1.09 | -6.77 | -1.50 | -3.05 | I3->I4 |
| Ir_18_17 | -11.34 | 1.04 | -15.45 | 2.56 | -4.79 | -2.76 | -2.56 | I5->I6 |
| Ir_18_18 | -14.24 | 7.61 | -17.71 | 2.48 | -7.84 | -1.04 | -7.61 | I3->I4 |
| Ir_18_19 | -13.02 | 6.31 | -10.68 | -4.21 | -8.05 | -1.09 | -6.31 | I3->I4 |
| Ir_18_20 | -8.71 | 9.00 | -18.16 | -1.76 | -7.25 | -3.86 | -9.00 | I3->I4 |
| Ir_18_21 | -3.91 | 1.32 | -9.41 | -10.41 | -1.16 | -7.17 | -1.32 | I3->I4 |
| Ir_18_22 | -1.03 | 0.38 | -8.56 | -9.05 | -2.77 | -9.71 | -0.38 | I3->I4 |
| Ir_19_0 | -13.15 | 0.46 | -15.38 | 3.64 | -11.81 | 5.50 | -5.50 | I7->I2 |
| Ir_19_1 | -4.21 | -3.46 | -6.74 | 0.86 | -15.08 | -2.10 | -0.86 | I5->I6 |
| Ir_19_2 | 2.29 | -4.75 | -11.14 | -7.55 | -7.46 | -2.14 | -2.29 | I2->I3 |
| Ir_19_3 | -2.51 | -4.04 | -4.30 | -7.79 | -6.20 | -5.90 | 2.51 | I2->I3 |
| Ir_19_4 | -4.69 | -1.17 | -14.06 | 6.05 | -12.31 | -4.56 | -6.05 | I5->I6 |
| Ir_19_5 | -3.19 | -0.63 | -10.12 | -4.34 | -8.82 | -3.65 | 0.63 | I3->I4 |
| Ir_19_6 | -2.20 | -4.46 | -14.17 | 0.60 | -6.28 | -4.21 | -0.60 | I5->I6 |
| Ir_19_8 | -9.89 | 3.57 | -17.88 | 7.00 | -12.35 | -1.19 | -7.00 | I5->I6 |
| Ir_19_9 | -9.57 | 7.78 | -19.73 | 4.05 | -11.73 | -1.53 | -7.78 | I3->I4 |
| Ir_19_10 | -9.14 | 2.49 | -9.25 | -9.07 | -5.78 | 0.00 | -2.49 | I3->I4 |
| Ir_19_11 | -10.46 | 3.18 | -13.85 | -2.12 | -6.86 | -0.63 | -3.18 | I3->I4 |
| Ir_19_12 | -7.01 | 3.56 | -17.43 | 4.65 | -8.25 | -6.26 | -4.65 | I5->I6 |
| Ir_19_13 | -7.96 | -1.37 | -10.37 | -1.89 | -12.10 | 2.95 | -2.95 | I7->I2 |
| Ir_19_14 | -9.72 | 3.29 | -15.89 | -2.14 | -8.21 | 1.93 | -3.29 | I3->I4 |
| Ir_19_15 | -3.91 | -1.84 | -12.60 | -3.60 | -11.71 | 2.92 | -2.92 | I7->I2 |
| Ir_19_16 | -11.04 | 3.60 | -16.25 | 2.15 | -8.37 | -0.84 | -3.60 | I3->I4 |
| Ir_19_17 | -11.42 | 2.38 | -19.29 | 6.34 | -6.61 | -2.14 | -6.34 | I5->I6 |
| Ir_19_18 | -9.91 | 3.13 | -14.53 | -0.58 | -6.09 | -2.75 | -3.13 | I3->I4 |
| Ir_19_19 | -15.40 | 4.99 | -11.11 | -1.57 | -1.29 | -6.35 | -4.99 | I3->I4 |
| Ir_19_20 | -6.86 | -1.92 | -17.10 | 5.37 | -10.35 | 0.12 | -5.37 | I5->I6 |
| Ir_19_21 | -9.44 | -2.29 | -8.98 | -4.06 | -7.94 | 1.97 | -1.97 | I7->I2 |
| Ir_19_22 | 0.56 | -4.59 | 6.45 | -21.35 | 3.98 | -15.78 | -6.45 | I4->I5 |
| Ir_20_0 | -8.98 | 0.58 | -10.73 | -2.33 | -11.05 | 1.78 | -1.78 | I7->I2 |
| Ir_20_1 | -5.94 | 0.17 | -13.32 | -0.95 | -9.67 | -1.03 | -0.17 | I3->I4 |
| Ir_20_2 | 1.93 | -8.40 | -8.44 | -3.37 | 0.08 | -12.55 | -1.93 | I2->I3 |
| Ir_20_3 | -1.84 | -2.45 | 1.14 | -13.05 | -9.78 | -4.76 | -1.14 | I4->I5 |
| Ir_20_4 | -6.99 | 2.93 | -19.73 | 2.42 | -8.85 | -0.52 | -2.93 | I3->I4 |

| | | | | | | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|
| Ir_20_5 | -5.76 | -1.32 | -12.61 | 0.54 | -3.48 | -8.10 | -0.54 | I5->I6 |
| Ir_20_6 | -5.64 | 0.80 | -5.58 | -5.33 | -11.05 | -3.94 | -0.80 | I3->I4 |
| Ir_20_7 | 4.01 | -7.00 | 1.34 | -9.71 | -9.10 | -10.27 | -4.01 | I2->I3 |
| Ir_20_8 | -8.88 | 3.12 | -19.14 | 1.81 | -7.48 | -0.18 | -3.12 | I3->I4 |
| Ir_20_9 | -7.98 | 2.40 | -15.07 | -0.77 | -8.86 | -0.45 | -2.40 | I3->I4 |
| Ir_20_10 | -10.02 | 5.78 | -20.13 | 5.32 | -16.86 | 5.17 | -5.78 | I3->I4 |
| Ir_20_11 | -9.91 | 4.55 | -9.70 | -5.18 | -11.07 | 0.56 | -4.55 | I3->I4 |
| Ir_20_12 | -11.59 | 5.60 | -12.49 | -3.50 | -8.39 | -0.37 | -5.60 | I3->I4 |
| Ir_20_13 | -9.63 | 2.41 | -9.40 | -3.36 | -4.91 | -5.85 | -2.41 | I3->I4 |
| Ir_20_14 | -9.59 | 1.29 | -16.29 | 13.00 | -24.82 | 5.66 | -13.00 | I5->I6 |
| Ir_20_15 | 0.44 | 2.76 | -5.35 | -9.67 | -14.46 | -4.45 | -2.76 | I3->I4 |
| Ir_20_16 | -10.48 | 3.48 | -13.37 | -0.86 | -7.72 | -1.80 | -3.48 | I3->I4 |
| Ir_20_17 | -10.52 | 0.58 | -11.70 | 0.45 | -5.22 | -4.33 | -0.58 | I3->I4 |
| Ir_20_18 | -9.52 | 0.48 | -13.96 | 1.35 | -2.51 | -6.57 | -1.35 | I5->I6 |
| Ir_20_19 | -12.58 | 3.28 | -14.04 | 3.91 | -10.13 | -1.19 | -3.91 | I5->I6 |
| Ir_20_20 | -6.19 | -1.45 | -12.36 | 1.98 | -8.55 | -4.17 | -1.98 | I5->I6 |
| Ir_20_21 | -3.97 | -1.82 | -7.04 | -9.18 | -6.33 | -2.40 | 1.82 | I3->I4 |
| Ir_21_0 | -8.00 | 1.46 | -9.73 | -7.27 | -9.76 | 2.56 | -2.56 | I7->I2 |
| Ir_21_1 | -5.90 | 0.42 | -6.84 | -8.05 | -10.63 | 0.26 | -0.42 | I3->I4 |
| Ir_21_2 | 1.85 | -9.17 | -9.05 | -2.91 | -9.01 | -2.46 | -1.85 | I2->I3 |
| Ir_21_3 | 3.72 | -7.23 | -5.04 | -11.79 | -6.20 | -4.21 | -3.72 | I2->I3 |
| Ir_21_4 | -5.89 | -2.43 | -5.56 | -4.99 | -10.08 | -1.78 | 1.78 | I7->I2 |
| Ir_21_5 | -7.42 | 0.93 | -10.74 | -2.49 | -10.96 | -0.06 | -0.93 | I3->I4 |
| Ir_21_6 | -5.61 | 5.26 | -19.15 | 7.93 | -22.06 | 2.89 | -7.93 | I5->I6 |
| Ir_21_8 | -8.23 | 3.10 | -16.79 | 0.41 | -11.01 | 1.78 | -3.10 | I3->I4 |
| Ir_21_9 | -9.65 | 0.17 | -11.90 | -4.08 | -6.93 | 1.64 | -1.64 | I7->I2 |
| Ir_21_10 | -3.96 | 0.15 | -19.65 | -1.96 | -5.14 | -0.18 | -0.15 | I3->I4 |
| Ir_21_11 | -8.72 | 3.21 | -11.40 | -4.82 | -6.49 | -2.52 | -3.21 | I3->I4 |
| Ir_21_12 | -6.22 | -1.71 | -11.48 | -4.44 | -6.52 | -0.37 | 0.37 | I7->I2 |
| Ir_21_13 | -0.50 | -2.45 | -4.77 | -7.91 | -1.96 | -13.13 | 0.50 | I2->I3 |
| Ir_21_14 | -7.99 | -1.57 | -13.56 | -0.73 | -11.29 | 4.39 | -4.39 | I7->I2 |
| Ir_21_15 | 7.71 | -5.10 | -11.71 | -19.42 | 14.12 | -16.35 | -14.12 | I6->I7 |
| Ir_21_16 | -12.03 | 5.72 | -18.35 | 2.01 | -7.70 | -0.39 | -5.72 | I3->I4 |
| Ir_21_17 | -10.34 | 3.26 | -13.72 | -3.55 | -4.11 | -2.28 | -3.26 | I3->I4 |
| Ir_21_18 | -7.66 | 3.47 | -13.47 | -5.17 | 0.35 | -8.25 | -3.47 | I3->I4 |
| Ir_21_19 | -9.40 | 12.07 | -13.55 | -6.22 | -12.39 | -1.25 | -12.07 | I3->I4 |
| Ir_21_20 | -7.16 | 1.62 | -10.79 | -2.68 | -8.07 | -3.66 | -1.62 | I3->I4 |
| Ir_21_21 | 3.88 | -9.26 | -5.24 | -8.53 | -11.78 | 0.17 | -3.88 | I2->I3 |
| Ir_21_22 | 2.69 | -3.12 | -5.91 | -11.91 | -6.09 | -6.41 | -2.69 | I2->I3 |
| Ir_22_0 | -4.05 | -3.59 | -13.79 | -1.04 | -9.83 | 1.57 | -1.57 | I7->I2 |
| Ir_22_1 | -1.72 | -1.32 | -2.12 | -16.48 | -7.60 | -1.51 | 1.32 | I3->I4 |
| Ir_22_2 | 7.13 | -7.96 | -1.62 | -17.09 | -5.52 | -5.68 | -7.13 | I2->I3 |
| Ir_22_3 | 2.47 | -3.41 | -6.21 | -9.27 | -8.95 | -5.37 | -2.47 | I2->I3 |
| Ir_22_4 | -4.40 | -1.77 | -12.79 | -1.24 | -12.03 | 1.49 | -1.49 | I7->I2 |
| Ir_22_5 | -3.89 | -0.07 | -14.33 | 0.21 | -14.03 | 1.38 | -1.38 | I7->I2 |
| Ir_22_6 | -7.35 | 2.10 | -12.18 | -1.06 | -12.33 | 0.08 | -2.10 | I3->I4 |
| Ir_22_8 | -8.34 | -1.94 | -7.38 | -5.14 | -9.72 | 1.77 | -1.77 | I7->I2 |
| Ir_22_9 | -8.54 | 0.64 | -12.37 | -3.87 | -4.13 | -2.47 | -0.64 | I3->I4 |
| Ir_22_10 | -4.26 | -1.55 | -11.17 | 0.31 | -9.90 | -4.16 | -0.31 | I5->I6 |
| Ir_22_11 | -3.38 | -2.63 | -10.22 | -5.77 | -4.88 | -3.86 | 2.63 | I3->I4 |
| Ir_22_12 | -4.97 | 2.69 | -16.13 | -8.14 | -2.14 | -2.04 | -2.69 | I3->I4 |
| Ir_22_13 | -3.13 | -3.63 | 2.76 | -13.78 | 1.63 | -14.60 | -2.76 | I4->I5 |
| Ir_22_14 | -7.12 | 0.88 | -9.92 | -11.68 | -1.62 | -1.28 | -0.88 | I3->I4 |
| Ir_22_16 | -8.81 | -2.01 | -13.76 | -2.85 | -1.38 | -1.93 | 1.38 | I6->I7 |
| Ir_22_17 | -9.65 | 4.55 | -13.72 | 0.26 | -10.56 | -1.61 | -4.55 | I3->I4 |
| Ir_22_18 | -4.93 | -0.20 | -4.39 | -11.21 | -7.78 | -2.22 | 0.20 | I3->I4 |
| Ir_22_19 | -12.45 | 9.21 | -21.12 | 3.53 | -8.83 | -1.08 | -9.21 | I3->I4 |
| Ir_22_20 | -5.94 | 4.94 | -13.76 | -5.57 | -5.98 | -4.43 | -4.94 | I3->I4 |
| Ir_22_21 | 3.07 | -11.09 | -8.87 | -6.71 | -4.76 | -2.37 | -3.07 | I2->I3 |
| Ir_22_22 | 0.71 | -7.83 | -1.49 | -8.61 | -7.59 | -5.93 | -0.71 | I2->I3 |

Table S3. Machine-learning predicted relative free energies of catalytic cycle intermediates for the out-of-sample data set of catalysts. Values in kcal/mol.

| | $\Delta G(\text{I3})$ | $\Delta G(\text{I4})$ | $\Delta G(\text{I5})$ | $\Delta G(\text{I6})$ | $\Delta G(\text{I7})$ |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Co_23_0 | -9.03 | -4.53 | -27.64 | -25.93 | -25.68 |
| Co_23_1 | -5.19 | -4.04 | -23.43 | -23.86 | -23.41 |
| Co_23_2 | -2.76 | -4.97 | -19.99 | -23.13 | -20.71 |
| Co_23_3 | -0.34 | -4.55 | -16.86 | -19.73 | -18.39 |
| Co_23_4 | -10.58 | -3.83 | -26.13 | -25.16 | -25.21 |
| Co_23_5 | -7.19 | -3.52 | -22.92 | -23.60 | -23.53 |
| Co_23_6 | -7.75 | -3.89 | -25.14 | -22.96 | -25.08 |
| Co_23_7 | 10.48 | -3.90 | -6.66 | -14.48 | -10.90 |
| Co_23_8 | -7.78 | -3.20 | -26.32 | -24.07 | -22.37 |
| Co_23_9 | -6.80 | -4.11 | -25.04 | -24.25 | -22.01 |
| Co_23_10 | -7.87 | -3.94 | -24.96 | -23.60 | -22.22 |
| Co_23_11 | -8.98 | -4.26 | -26.82 | -24.75 | -22.37 |
| Co_23_12 | -7.39 | -3.69 | -25.27 | -23.59 | -21.80 |
| Co_23_13 | -1.60 | -3.55 | -18.04 | -19.87 | -15.81 |
| Co_23_14 | -6.92 | -3.89 | -24.63 | -22.99 | -21.20 |
| Co_23_16 | -9.59 | -2.37 | -25.26 | -24.07 | -23.60 |
| Co_23_17 | -8.75 | -2.79 | -21.99 | -22.36 | -21.52 |
| Co_23_18 | -10.36 | -3.97 | -24.06 | -23.71 | -23.42 |
| Co_23_19 | -10.21 | -4.20 | -23.24 | -22.53 | -22.17 |
| Co_23_20 | -8.48 | -2.96 | -22.98 | -22.46 | -22.19 |
| Co_23_21 | -2.89 | -3.50 | -18.79 | -22.33 | -20.04 |
| Co_23_22 | -0.18 | -4.71 | -15.66 | -21.61 | -17.71 |
| Co_23_23 | -4.47 | -4.50 | -22.41 | -23.45 | -22.55 |
| Co_23_24 | -1.23 | -5.64 | -19.04 | -20.32 | -19.83 |
| Co_23_25 | -3.50 | -3.17 | -22.07 | -21.95 | -19.02 |
| Co_23_26 | -8.15 | -2.53 | -22.39 | -22.44 | -22.16 |
| Co_23_27 | -2.57 | -4.21 | -18.06 | -22.17 | -19.72 |
| Co_23_28 | -3.85 | -5.25 | -18.98 | -22.53 | -20.66 |
| Co_24_0 | -7.53 | -5.28 | -26.14 | -24.52 | -24.52 |
| Co_24_1 | -3.62 | -4.58 | -22.04 | -22.44 | -22.16 |
| Co_24_2 | -0.96 | -5.75 | -18.13 | -21.15 | -18.95 |
| Co_24_3 | 0.24 | -5.33 | -16.71 | -18.75 | -18.05 |
| Co_24_4 | -8.83 | -4.41 | -24.40 | -23.45 | -23.74 |
| Co_24_5 | -6.69 | -3.61 | -22.14 | -23.01 | -23.26 |
| Co_24_6 | -5.72 | -4.48 | -23.09 | -21.11 | -23.41 |
| Co_24_7 | 11.67 | -4.89 | -5.58 | -13.68 | -10.00 |
| Co_24_8 | -6.12 | -3.84 | -24.59 | -22.37 | -21.00 |
| Co_24_9 | -6.18 | -4.67 | -24.84 | -23.63 | -21.78 |
| Co_24_10 | -6.76 | -4.73 | -23.96 | -22.38 | -21.29 |
| Co_24_11 | -6.27 | -4.76 | -23.87 | -22.01 | -19.77 |
| Co_24_12 | -4.87 | -4.29 | -22.46 | -21.22 | -19.38 |
| Co_24_13 | -0.77 | -3.85 | -18.49 | -19.47 | -15.76 |
| Co_24_14 | -4.91 | -4.46 | -22.21 | -21.26 | -19.45 |
| Co_24_16 | -7.42 | -3.03 | -22.52 | -21.33 | -21.38 |
| Co_24_17 | -7.50 | -4.00 | -21.67 | -21.13 | -20.97 |
| Co_24_18 | -8.77 | -5.29 | -22.59 | -22.71 | -22.19 |
| Co_24_19 | -8.72 | -4.29 | -22.16 | -21.88 | -20.93 |
| Co_24_20 | -5.86 | -3.82 | -19.18 | -19.84 | -19.92 |
| Co_24_21 | -1.68 | -4.32 | -17.85 | -21.45 | -19.36 |
| Co_24_22 | 1.49 | -5.03 | -14.39 | -19.26 | -16.33 |
| Co_24_23 | -2.81 | -4.96 | -20.84 | -21.78 | -21.15 |
| Co_24_24 | 0.82 | -6.17 | -17.06 | -18.49 | -18.05 |
| Co_24_25 | -1.88 | -3.91 | -20.26 | -20.62 | -18.13 |

| | | | | | |
|----------|--------|-------|--------|--------|--------|
| Co_24_26 | -6.12 | -3.08 | -19.92 | -20.29 | -19.65 |
| Co_24_27 | -0.43 | -5.09 | -16.03 | -20.65 | -17.73 |
| Co_24_28 | -2.32 | -5.73 | -17.98 | -20.98 | -19.42 |
| Co_25_0 | -8.08 | -3.55 | -26.70 | -25.17 | -23.90 |
| Co_25_1 | -4.74 | -3.53 | -22.76 | -23.26 | -21.67 |
| Co_25_2 | -3.11 | -5.13 | -21.39 | -23.87 | -19.42 |
| Co_25_3 | 0.36 | -4.27 | -16.99 | -19.66 | -16.19 |
| Co_25_4 | -10.06 | -3.01 | -26.61 | -24.19 | -23.27 |
| Co_25_5 | -8.31 | -2.35 | -24.01 | -23.79 | -22.44 |
| Co_25_6 | -7.32 | -3.58 | -25.44 | -22.35 | -23.62 |
| Co_25_8 | -6.62 | -1.97 | -25.24 | -22.58 | -20.03 |
| Co_25_9 | -6.81 | -3.11 | -25.62 | -23.56 | -21.20 |
| Co_25_10 | -7.78 | -3.60 | -25.65 | -23.05 | -21.06 |
| Co_25_11 | -8.31 | -3.62 | -26.49 | -23.27 | -20.66 |
| Co_25_12 | -6.57 | -3.09 | -24.93 | -22.49 | -19.82 |
| Co_25_13 | -1.55 | -2.50 | -18.51 | -19.26 | -14.85 |
| Co_25_14 | -6.94 | -3.11 | -25.19 | -22.57 | -20.25 |
| Co_25_16 | -9.59 | -1.95 | -24.27 | -22.27 | -21.82 |
| Co_25_17 | -9.49 | -3.78 | -24.37 | -23.02 | -22.33 |
| Co_25_18 | -10.14 | -3.17 | -23.33 | -22.50 | -22.16 |
| Co_25_19 | -9.35 | -2.50 | -24.39 | -21.61 | -20.54 |
| Co_25_20 | -6.78 | -1.99 | -21.69 | -20.71 | -19.05 |
| Co_25_21 | -3.88 | -4.13 | -20.44 | -23.83 | -19.69 |
| Co_25_22 | 0.26 | -3.92 | -16.78 | -20.61 | -16.13 |
| Co_25_23 | -3.27 | -4.33 | -20.97 | -23.25 | -19.91 |
| Co_25_24 | -0.17 | -5.33 | -17.87 | -20.01 | -17.20 |
| Co_25_25 | -3.29 | -2.09 | -22.10 | -21.53 | -17.96 |
| Co_25_26 | -8.65 | -2.73 | -23.03 | -22.09 | -21.48 |
| Co_25_27 | -1.45 | -3.35 | -17.11 | -21.32 | -17.27 |
| Co_25_28 | -2.27 | -5.07 | -17.70 | -21.68 | -17.19 |
| Co_26_0 | -10.77 | -3.98 | -27.00 | -25.38 | -26.48 |
| Co_26_1 | -6.00 | -3.18 | -21.85 | -22.28 | -23.64 |
| Co_26_2 | -4.10 | -4.09 | -18.06 | -21.74 | -21.37 |
| Co_26_3 | -0.60 | -3.13 | -14.28 | -17.32 | -18.03 |
| Co_26_4 | -13.60 | -5.89 | -29.35 | -26.03 | -24.15 |
| Co_26_5 | -9.20 | -4.49 | -24.93 | -23.03 | -21.71 |
| Co_26_6 | -7.98 | -4.51 | -24.78 | -21.72 | -21.34 |
| Co_26_7 | 7.90 | -3.00 | -6.61 | -13.88 | -12.44 |
| Co_26_8 | -8.24 | -2.15 | -24.51 | -22.03 | -21.65 |
| Co_26_9 | -8.91 | -3.59 | -24.55 | -23.28 | -23.27 |
| Co_26_10 | -10.64 | -2.99 | -26.28 | -23.47 | -24.04 |
| Co_26_11 | -9.86 | -3.54 | -25.87 | -22.84 | -21.97 |
| Co_26_12 | -9.55 | -2.50 | -24.85 | -22.38 | -22.54 |
| Co_26_13 | -4.32 | -3.34 | -18.89 | -20.09 | -17.66 |
| Co_26_14 | -7.40 | -2.44 | -23.31 | -20.90 | -20.85 |
| Co_26_16 | -14.69 | -1.90 | -30.44 | -24.68 | -23.38 |
| Co_26_17 | -12.60 | -5.32 | -27.57 | -24.55 | -22.04 |
| Co_26_18 | -15.36 | -3.45 | -29.87 | -25.23 | -24.11 |
| Co_26_19 | -15.59 | -3.20 | -30.87 | -25.32 | -23.12 |
| Co_26_20 | -11.84 | -4.05 | -26.26 | -22.84 | -21.30 |
| Co_26_21 | -4.60 | -3.97 | -18.83 | -21.74 | -20.85 |
| Co_26_22 | -1.43 | -3.25 | -15.05 | -20.40 | -17.73 |
| Co_26_23 | -5.69 | -3.64 | -20.77 | -22.57 | -22.90 |
| Co_26_24 | -1.80 | -4.76 | -18.32 | -18.82 | -19.83 |
| Co_26_26 | -14.79 | -2.42 | -30.06 | -25.05 | -23.54 |
| Co_26_27 | -4.39 | -3.81 | -17.05 | -20.58 | -20.37 |
| Co_26_28 | -5.03 | -3.97 | -17.69 | -21.62 | -20.92 |
| Co_27_0 | -8.90 | -4.55 | -26.78 | -26.06 | -25.28 |
| Co_27_1 | -4.32 | -4.12 | -21.34 | -23.46 | -21.96 |
| Co_27_2 | -2.24 | -5.30 | -18.76 | -22.65 | -19.51 |

| | | | | | |
|----------|--------|-------|--------|--------|--------|
| Co_27_3 | 0.50 | -4.81 | -15.06 | -19.22 | -16.93 |
| Co_27_4 | -9.59 | -3.60 | -24.44 | -23.88 | -23.60 |
| Co_27_5 | -7.18 | -3.96 | -22.59 | -23.90 | -23.29 |
| Co_27_6 | -5.89 | -3.94 | -22.28 | -21.00 | -22.83 |
| Co_27_8 | -6.92 | -2.67 | -24.76 | -23.73 | -21.41 |
| Co_27_9 | -4.86 | -3.83 | -22.02 | -22.71 | -19.72 |
| Co_27_10 | -7.07 | -4.55 | -22.70 | -23.44 | -20.91 |
| Co_27_11 | -7.07 | -3.90 | -23.44 | -23.13 | -19.95 |
| Co_27_12 | -6.14 | -4.01 | -22.65 | -22.48 | -19.79 |
| Co_27_13 | -1.42 | -3.61 | -16.97 | -20.46 | -15.31 |
| Co_27_14 | -5.71 | -3.65 | -22.02 | -22.39 | -19.51 |
| Co_27_16 | -10.01 | -2.63 | -24.06 | -23.59 | -23.28 |
| Co_27_17 | -10.42 | -3.88 | -24.01 | -23.81 | -23.25 |
| Co_27_18 | -11.16 | -4.46 | -23.71 | -23.94 | -23.34 |
| Co_27_19 | -9.33 | -4.75 | -22.66 | -22.34 | -21.16 |
| Co_27_20 | -7.00 | -3.22 | -19.45 | -20.55 | -19.93 |
| Co_27_21 | -2.98 | -3.77 | -19.10 | -22.61 | -19.81 |
| Co_27_22 | 1.10 | -4.14 | -13.82 | -20.34 | -16.10 |
| Co_27_23 | -3.72 | -4.07 | -20.67 | -23.11 | -21.37 |
| Co_27_24 | -0.78 | -5.74 | -17.87 | -20.69 | -19.21 |
| Co_27_25 | -1.96 | -3.24 | -19.74 | -22.41 | -17.55 |
| Co_27_26 | -8.47 | -3.51 | -21.23 | -21.63 | -21.66 |
| Co_27_27 | -1.57 | -4.55 | -16.77 | -22.11 | -17.93 |
| Co_27_28 | -3.21 | -5.28 | -18.16 | -22.10 | -19.34 |
| Co_28_0 | -9.20 | -4.77 | -26.86 | -25.99 | -25.39 |
| Co_28_1 | -4.92 | -3.88 | -22.10 | -23.78 | -22.62 |
| Co_28_2 | -3.13 | -5.44 | -19.82 | -23.81 | -20.92 |
| Co_28_3 | 0.00 | -5.11 | -15.39 | -19.46 | -17.19 |
| Co_28_4 | -4.37 | -3.36 | -19.06 | -21.52 | -18.65 |
| Co_28_5 | -6.05 | -4.31 | -20.59 | -22.21 | -21.21 |
| Co_28_6 | -5.23 | -4.13 | -22.06 | -20.81 | -22.30 |
| Co_28_8 | -6.55 | -3.94 | -23.42 | -22.80 | -20.42 |
| Co_28_9 | -4.91 | -4.26 | -21.29 | -22.89 | -19.36 |
| Co_28_10 | -7.83 | -4.90 | -22.96 | -23.67 | -21.35 |
| Co_28_11 | -8.31 | -4.48 | -24.83 | -23.67 | -21.07 |
| Co_28_12 | -5.90 | -4.35 | -22.17 | -22.76 | -19.50 |
| Co_28_13 | -2.12 | -3.86 | -17.72 | -20.48 | -15.93 |
| Co_28_14 | -6.20 | -3.86 | -22.62 | -22.56 | -19.89 |
| Co_28_16 | -9.78 | -3.08 | -23.14 | -22.66 | -23.01 |
| Co_28_17 | -8.49 | -3.78 | -22.11 | -22.33 | -20.84 |
| Co_28_18 | -10.53 | -3.91 | -23.42 | -23.47 | -22.93 |
| Co_28_19 | -9.77 | -4.08 | -23.27 | -22.65 | -21.99 |
| Co_28_20 | -7.05 | -4.53 | -20.43 | -21.41 | -20.39 |
| Co_28_21 | -3.77 | -4.67 | -19.71 | -22.69 | -20.51 |
| Co_28_22 | -0.04 | -5.01 | -14.77 | -21.01 | -16.71 |
| Co_28_23 | -4.40 | -4.63 | -21.15 | -23.37 | -22.00 |
| Co_28_24 | -0.79 | -5.84 | -17.55 | -19.63 | -18.88 |
| Co_28_25 | -2.97 | -3.62 | -21.14 | -23.01 | -18.14 |
| Co_28_26 | -8.42 | -3.32 | -22.19 | -22.50 | -21.83 |
| Co_28_27 | -3.90 | -5.12 | -20.02 | -22.62 | -20.19 |
| Co_28_28 | -3.74 | -5.44 | -18.39 | -22.26 | -19.80 |
| Rh_23_0 | -1.59 | -5.87 | -16.25 | -24.06 | -19.34 |
| Rh_23_1 | 2.10 | -5.33 | -12.06 | -22.14 | -17.04 |
| Rh_23_2 | 4.41 | -6.34 | -8.58 | -21.23 | -13.83 |
| Rh_23_3 | 6.28 | -5.62 | -6.00 | -18.64 | -12.21 |
| Rh_23_4 | -1.88 | -5.49 | -14.31 | -22.28 | -17.57 |
| Rh_23_5 | 1.97 | -5.19 | -10.10 | -20.08 | -14.76 |
| Rh_23_6 | 2.62 | -5.73 | -11.68 | -18.72 | -15.93 |
| Rh_23_7 | 16.80 | -5.24 | 4.23 | -13.62 | -4.64 |
| Rh_23_8 | -0.88 | -4.44 | -15.40 | -22.22 | -15.83 |

| | | | | | |
|----------|-------|-------|--------|--------|--------|
| Rh_23_9 | -0.33 | -5.25 | -14.55 | -22.74 | -15.72 |
| Rh_23_10 | -1.10 | -5.44 | -14.19 | -21.75 | -15.91 |
| Rh_23_11 | -1.76 | -5.60 | -15.72 | -22.69 | -15.43 |
| Rh_23_12 | -0.22 | -4.91 | -14.01 | -21.60 | -14.79 |
| Rh_23_13 | 5.02 | -4.58 | -7.07 | -18.49 | -9.33 |
| Rh_23_14 | -0.30 | -4.98 | -13.95 | -21.29 | -14.98 |
| Rh_23_16 | -1.29 | -4.94 | -12.88 | -22.26 | -15.48 |
| Rh_23_17 | -0.49 | -4.78 | -10.55 | -19.93 | -13.74 |
| Rh_23_18 | -1.83 | -5.62 | -12.71 | -21.62 | -14.92 |
| Rh_23_19 | -1.68 | -5.43 | -11.53 | -20.17 | -14.23 |
| Rh_23_20 | -0.56 | -4.81 | -12.03 | -20.56 | -14.56 |
| Rh_23_21 | 3.72 | -5.48 | -8.56 | -20.93 | -13.75 |
| Rh_23_22 | 6.56 | -6.10 | -5.26 | -20.36 | -11.53 |
| Rh_23_23 | 2.69 | -5.72 | -11.30 | -21.84 | -16.41 |
| Rh_23_24 | 5.88 | -7.08 | -7.72 | -18.87 | -13.37 |
| Rh_23_25 | 2.39 | -4.51 | -11.94 | -21.28 | -13.33 |
| Rh_23_26 | -0.65 | -5.08 | -11.30 | -20.94 | -14.40 |
| Rh_23_27 | 4.52 | -6.14 | -7.07 | -20.34 | -12.97 |
| Rh_23_28 | 3.05 | -6.41 | -8.41 | -20.93 | -14.11 |
| Rh_24_0 | -0.01 | -6.59 | -14.61 | -22.69 | -18.11 |
| Rh_24_1 | 3.68 | -5.84 | -10.63 | -20.64 | -15.68 |
| Rh_24_2 | 5.98 | -6.89 | -7.20 | -19.46 | -12.77 |
| Rh_24_3 | 7.05 | -6.40 | -5.47 | -17.61 | -11.80 |
| Rh_24_4 | -0.20 | -6.06 | -12.64 | -20.60 | -16.14 |
| Rh_24_5 | 2.71 | -5.45 | -9.68 | -19.22 | -14.82 |
| Rh_24_6 | 4.32 | -6.26 | -10.04 | -16.85 | -14.50 |
| Rh_24_7 | 18.00 | -6.04 | 4.98 | -12.76 | -3.91 |
| Rh_24_8 | 0.91 | -5.18 | -13.55 | -20.56 | -14.39 |
| Rh_24_9 | 1.08 | -5.93 | -13.59 | -21.57 | -14.88 |
| Rh_24_10 | 0.33 | -5.99 | -12.82 | -20.49 | -14.50 |
| Rh_24_11 | 0.76 | -6.11 | -12.84 | -20.04 | -13.19 |
| Rh_24_12 | 2.07 | -5.67 | -11.65 | -19.43 | -12.80 |
| Rh_24_13 | 6.11 | -5.21 | -7.04 | -17.75 | -8.77 |
| Rh_24_14 | 1.61 | -5.56 | -11.72 | -19.65 | -13.11 |
| Rh_24_16 | 1.53 | -4.64 | -9.92 | -18.52 | -12.58 |
| Rh_24_17 | 1.61 | -6.12 | -9.80 | -19.11 | -12.31 |
| Rh_24_18 | -1.57 | -6.67 | -11.97 | -21.10 | -15.12 |
| Rh_24_19 | -0.07 | -6.35 | -10.73 | -19.19 | -12.94 |
| Rh_24_20 | 3.87 | -6.18 | -6.91 | -17.59 | -10.75 |
| Rh_24_21 | 5.67 | -6.18 | -6.59 | -19.27 | -12.35 |
| Rh_24_22 | 8.70 | -6.72 | -2.62 | -17.62 | -9.26 |
| Rh_24_23 | 4.18 | -6.19 | -9.89 | -20.13 | -15.04 |
| Rh_24_24 | 7.64 | -7.31 | -6.23 | -16.89 | -11.93 |
| Rh_24_25 | 4.82 | -5.23 | -9.41 | -19.42 | -11.76 |
| Rh_24_26 | 2.21 | -5.00 | -8.85 | -17.94 | -11.69 |
| Rh_24_27 | 6.18 | -6.73 | -5.67 | -19.49 | -11.71 |
| Rh_24_28 | 4.71 | -7.04 | -6.96 | -19.73 | -13.01 |
| Rh_25_0 | -1.23 | -5.24 | -15.73 | -23.94 | -17.51 |
| Rh_25_1 | 2.36 | -5.10 | -11.45 | -22.10 | -15.31 |
| Rh_25_2 | 4.05 | -6.36 | -9.50 | -22.26 | -12.64 |
| Rh_25_3 | 6.99 | -5.34 | -5.74 | -18.53 | -10.09 |
| Rh_25_4 | -1.61 | -4.89 | -14.75 | -21.96 | -15.95 |
| Rh_25_5 | 0.80 | -4.17 | -11.58 | -20.69 | -14.63 |
| Rh_25_6 | 1.37 | -5.09 | -13.02 | -19.21 | -15.68 |
| Rh_25_8 | -0.82 | -3.47 | -15.48 | -21.59 | -14.22 |
| Rh_25_9 | -0.33 | -4.54 | -14.95 | -22.14 | -14.61 |
| Rh_25_10 | -1.27 | -4.78 | -14.98 | -21.41 | -14.76 |
| Rh_25_11 | -1.60 | -4.99 | -15.54 | -21.68 | -14.20 |
| Rh_25_12 | -0.21 | -4.29 | -14.53 | -21.16 | -13.57 |
| Rh_25_13 | 4.70 | -3.56 | -8.10 | -18.13 | -8.34 |

| | | | | | |
|----------|-------|-------|--------|--------|--------|
| Rh_25_14 | -0.43 | -4.26 | -14.53 | -21.07 | -14.01 |
| Rh_25_16 | -1.74 | -3.99 | -13.16 | -20.49 | -14.12 |
| Rh_25_17 | -1.35 | -4.46 | -12.51 | -20.04 | -13.85 |
| Rh_25_18 | -1.84 | -5.24 | -11.95 | -20.42 | -13.86 |
| Rh_25_19 | -1.11 | -4.84 | -12.10 | -19.20 | -12.21 |
| Rh_25_20 | 1.90 | -4.83 | -9.66 | -18.04 | -11.04 |
| Rh_25_21 | 3.57 | -5.25 | -8.91 | -21.96 | -12.48 |
| Rh_25_22 | 7.55 | -5.18 | -4.71 | -18.86 | -9.16 |
| Rh_25_23 | 3.16 | -5.34 | -10.58 | -21.51 | -13.98 |
| Rh_25_24 | 6.61 | -6.81 | -7.09 | -18.58 | -10.97 |
| Rh_25_25 | 2.92 | -3.39 | -11.74 | -20.32 | -11.76 |
| Rh_25_26 | -1.20 | -4.35 | -12.06 | -19.87 | -13.81 |
| Rh_25_27 | 4.50 | -5.42 | -7.33 | -20.44 | -11.41 |
| Rh_25_28 | 4.74 | -6.32 | -6.46 | -19.77 | -10.25 |
| Rh_26_0 | -2.51 | -5.68 | -15.39 | -22.92 | -18.34 |
| Rh_26_1 | 1.41 | -5.11 | -10.66 | -20.37 | -16.36 |
| Rh_26_2 | 3.31 | -6.11 | -7.36 | -20.01 | -14.04 |
| Rh_26_3 | 6.18 | -5.23 | -3.42 | -16.03 | -11.23 |
| Rh_26_4 | -3.70 | -6.09 | -15.90 | -22.67 | -14.75 |
| Rh_26_5 | 0.73 | -5.05 | -11.74 | -19.17 | -12.45 |
| Rh_26_6 | 0.83 | -6.22 | -12.64 | -18.94 | -13.19 |
| Rh_26_7 | 14.43 | -4.90 | 3.61 | -12.94 | -6.14 |
| Rh_26_8 | -1.84 | -4.18 | -14.40 | -20.78 | -15.27 |
| Rh_26_9 | -1.97 | -5.05 | -14.27 | -21.19 | -16.18 |
| Rh_26_10 | -2.58 | -5.82 | -14.13 | -21.45 | -16.07 |
| Rh_26_11 | -2.93 | -5.36 | -15.34 | -21.13 | -15.23 |
| Rh_26_12 | -2.80 | -4.28 | -14.69 | -20.98 | -16.06 |
| Rh_26_13 | 3.37 | -4.57 | -7.13 | -17.74 | -9.87 |
| Rh_26_14 | -0.66 | -4.03 | -12.92 | -19.16 | -14.02 |
| Rh_26_16 | -5.04 | -2.69 | -17.75 | -21.63 | -14.33 |
| Rh_26_17 | -2.89 | -5.69 | -14.23 | -20.82 | -12.03 |
| Rh_26_18 | -5.21 | -5.37 | -16.80 | -22.52 | -14.35 |
| Rh_26_19 | -6.15 | -4.28 | -17.83 | -21.95 | -13.88 |
| Rh_26_20 | -0.42 | -5.82 | -12.21 | -19.18 | -10.44 |
| Rh_26_21 | 2.00 | -5.02 | -9.42 | -20.65 | -14.69 |
| Rh_26_22 | 5.71 | -6.16 | -4.48 | -18.80 | -10.77 |
| Rh_26_23 | 1.85 | -5.33 | -9.84 | -20.59 | -15.67 |
| Rh_26_24 | 5.07 | -6.84 | -7.37 | -17.13 | -13.30 |
| Rh_26_26 | -4.50 | -3.74 | -16.40 | -21.75 | -13.20 |
| Rh_26_27 | 1.83 | -5.75 | -7.36 | -19.97 | -13.79 |
| Rh_26_28 | 3.03 | -6.89 | -6.16 | -19.79 | -12.62 |
| Rh_27_0 | -1.15 | -6.19 | -14.90 | -23.96 | -18.22 |
| Rh_27_1 | 2.69 | -5.28 | -10.38 | -21.57 | -15.53 |
| Rh_27_2 | 5.00 | -6.66 | -7.40 | -21.01 | -13.04 |
| Rh_27_3 | 7.84 | -5.78 | -3.36 | -17.52 | -10.05 |
| Rh_27_4 | -1.29 | -5.46 | -13.07 | -21.68 | -16.20 |
| Rh_27_5 | 1.78 | -5.53 | -10.15 | -20.55 | -15.15 |
| Rh_27_6 | 2.32 | -5.64 | -11.09 | -18.97 | -15.55 |
| Rh_27_8 | -0.28 | -4.84 | -14.29 | -21.79 | -14.76 |
| Rh_27_9 | 1.15 | -5.34 | -11.99 | -21.73 | -13.68 |
| Rh_27_10 | 0.18 | -5.87 | -11.56 | -21.46 | -14.02 |
| Rh_27_11 | -0.16 | -6.06 | -12.47 | -21.37 | -13.03 |
| Rh_27_12 | 0.92 | -5.37 | -11.49 | -20.50 | -12.77 |
| Rh_27_13 | 4.01 | -5.21 | -7.69 | -19.88 | -9.71 |
| Rh_27_14 | 1.45 | -5.22 | -10.92 | -20.28 | -12.29 |
| Rh_27_16 | -0.53 | -4.99 | -11.45 | -20.91 | -14.32 |
| Rh_27_17 | -0.92 | -5.47 | -11.42 | -20.70 | -14.11 |
| Rh_27_18 | -2.13 | -5.89 | -12.54 | -21.22 | -15.00 |
| Rh_27_19 | -0.89 | -6.45 | -10.94 | -20.53 | -13.02 |
| Rh_27_20 | 0.76 | -4.91 | -8.77 | -18.81 | -12.55 |

| | | | | | |
|----------|-------|-------|--------|--------|--------|
| Rh_27_21 | 3.52 | -5.38 | -8.80 | -21.13 | -13.46 |
| Rh_27_22 | 8.04 | -5.82 | -2.59 | -18.65 | -9.05 |
| Rh_27_23 | 3.82 | -5.99 | -9.05 | -21.15 | -14.40 |
| Rh_27_24 | 6.33 | -7.32 | -7.00 | -18.97 | -12.64 |
| Rh_27_25 | 4.24 | -4.82 | -9.44 | -20.90 | -11.22 |
| Rh_27_26 | 0.18 | -5.05 | -9.81 | -19.69 | -12.76 |
| Rh_27_27 | 4.85 | -5.89 | -6.44 | -20.14 | -11.78 |
| Rh_27_28 | 3.76 | -6.52 | -7.10 | -20.51 | -12.81 |
| Rh_28_0 | -1.48 | -6.27 | -15.02 | -23.93 | -18.42 |
| Rh_28_1 | 2.59 | -5.66 | -10.40 | -21.72 | -15.68 |
| Rh_28_2 | 4.17 | -7.04 | -8.53 | -21.81 | -13.89 |
| Rh_28_3 | 6.40 | -6.37 | -4.58 | -18.65 | -11.31 |
| Rh_28_4 | -1.30 | -5.61 | -13.19 | -21.52 | -16.23 |
| Rh_28_5 | 2.70 | -5.78 | -8.33 | -19.21 | -13.25 |
| Rh_28_6 | 3.66 | -5.76 | -9.53 | -17.68 | -14.14 |
| Rh_28_8 | 0.43 | -5.24 | -12.43 | -21.15 | -13.55 |
| Rh_28_9 | 0.68 | -6.41 | -11.13 | -22.13 | -13.84 |
| Rh_28_10 | -0.90 | -5.97 | -13.20 | -21.65 | -15.13 |
| Rh_28_11 | -1.35 | -5.94 | -13.99 | -21.99 | -14.14 |
| Rh_28_12 | 0.57 | -5.96 | -11.58 | -21.42 | -13.33 |
| Rh_28_13 | 5.07 | -5.35 | -5.95 | -18.74 | -8.39 |
| Rh_28_14 | 1.29 | -5.51 | -10.98 | -20.44 | -12.21 |
| Rh_28_16 | -1.31 | -4.85 | -11.58 | -20.82 | -14.40 |
| Rh_28_17 | 0.30 | -5.49 | -9.86 | -20.02 | -12.22 |
| Rh_28_18 | -1.42 | -5.66 | -11.57 | -20.81 | -14.39 |
| Rh_28_19 | -0.60 | -5.62 | -10.74 | -19.65 | -13.27 |
| Rh_28_20 | 1.43 | -5.67 | -8.75 | -19.17 | -11.99 |
| Rh_28_21 | 3.31 | -6.25 | -8.36 | -21.64 | -13.88 |
| Rh_28_22 | 7.08 | -6.70 | -2.92 | -19.84 | -9.80 |
| Rh_28_23 | 3.06 | -6.13 | -9.66 | -21.23 | -14.95 |
| Rh_28_24 | 6.35 | -7.39 | -6.34 | -18.18 | -12.10 |
| Rh_28_25 | 3.61 | -4.66 | -9.82 | -20.86 | -11.75 |
| Rh_28_26 | 1.33 | -4.88 | -8.70 | -18.72 | -12.03 |
| Rh_28_27 | 3.87 | -6.42 | -7.67 | -21.05 | -13.00 |
| Rh_28_28 | 3.21 | -6.66 | -7.32 | -20.66 | -13.27 |
| Ir_23_0 | -7.70 | -4.77 | -21.26 | -23.49 | -33.52 |
| Ir_23_1 | -3.95 | -4.07 | -17.05 | -21.70 | -31.27 |
| Ir_23_2 | -1.72 | -4.90 | -13.71 | -20.88 | -28.15 |
| Ir_23_3 | 0.59 | -3.92 | -10.20 | -18.54 | -26.17 |
| Ir_23_4 | -8.81 | -4.45 | -20.68 | -21.81 | -32.14 |
| Ir_23_5 | -4.65 | -3.71 | -15.34 | -19.81 | -29.19 |
| Ir_23_6 | -4.06 | -4.67 | -17.51 | -18.06 | -30.30 |
| Ir_23_7 | 11.06 | -3.52 | 0.10 | -13.81 | -18.72 |
| Ir_23_8 | -6.81 | -3.37 | -20.30 | -21.36 | -30.03 |
| Ir_23_9 | -6.54 | -3.73 | -19.38 | -22.17 | -30.13 |
| Ir_23_10 | -7.17 | -4.36 | -19.25 | -20.99 | -30.19 |
| Ir_23_11 | -7.87 | -4.05 | -20.56 | -21.94 | -29.69 |
| Ir_23_12 | -6.15 | -3.76 | -18.91 | -20.79 | -28.98 |
| Ir_23_13 | -0.82 | -3.27 | -12.06 | -18.14 | -23.68 |
| Ir_23_14 | -6.60 | -3.63 | -19.48 | -20.67 | -29.35 |
| Ir_23_16 | -8.25 | -3.65 | -19.76 | -22.55 | -29.98 |
| Ir_23_17 | -6.72 | -3.12 | -17.01 | -19.68 | -27.64 |
| Ir_23_18 | -8.95 | -4.67 | -19.03 | -21.41 | -29.45 |
| Ir_23_19 | -8.66 | -4.16 | -18.42 | -19.73 | -28.69 |
| Ir_23_20 | -8.29 | -3.73 | -18.98 | -21.38 | -29.69 |
| Ir_23_21 | -2.16 | -4.68 | -13.60 | -20.26 | -28.02 |
| Ir_23_22 | 0.51 | -4.77 | -10.29 | -20.01 | -25.79 |
| Ir_23_23 | -3.40 | -4.47 | -16.40 | -21.37 | -30.67 |
| Ir_23_24 | -0.32 | -5.58 | -12.61 | -18.87 | -27.79 |
| Ir_23_25 | -3.78 | -3.07 | -17.02 | -21.06 | -27.91 |

| | | | | | |
|----------|-------|-------|--------|--------|--------|
| Ir_23_26 | -7.83 | -3.86 | -17.63 | -21.34 | -29.22 |
| Ir_23_27 | -1.34 | -5.24 | -11.85 | -19.88 | -27.27 |
| Ir_23_28 | -2.87 | -5.08 | -13.36 | -20.16 | -28.19 |
| Ir_24_0 | -6.15 | -5.47 | -19.54 | -22.20 | -32.32 |
| Ir_24_1 | -2.34 | -4.64 | -15.51 | -20.11 | -29.91 |
| Ir_24_2 | -0.18 | -5.53 | -12.31 | -18.95 | -27.02 |
| Ir_24_3 | 0.88 | -4.80 | -10.47 | -17.73 | -26.21 |
| Ir_24_4 | -7.20 | -4.96 | -19.19 | -20.07 | -30.78 |
| Ir_24_5 | -4.01 | -4.16 | -15.44 | -18.78 | -29.40 |
| Ir_24_6 | -2.34 | -5.27 | -15.96 | -15.95 | -28.82 |
| Ir_24_7 | 12.48 | -4.76 | 1.08 | -12.67 | -17.88 |
| Ir_24_8 | -5.22 | -4.05 | -18.63 | -19.86 | -28.69 |
| Ir_24_9 | -5.05 | -4.38 | -18.41 | -20.93 | -29.23 |
| Ir_24_10 | -5.79 | -4.52 | -17.96 | -19.85 | -28.87 |
| Ir_24_11 | -5.22 | -5.24 | -17.88 | -19.26 | -27.46 |
| Ir_24_12 | -3.93 | -4.43 | -16.76 | -18.66 | -27.09 |
| Ir_24_13 | 0.40 | -3.73 | -11.99 | -17.54 | -23.03 |
| Ir_24_14 | -4.62 | -4.24 | -16.87 | -19.18 | -27.51 |
| Ir_24_16 | -5.37 | -3.52 | -16.14 | -18.07 | -27.15 |
| Ir_24_17 | -5.41 | -5.15 | -15.56 | -18.80 | -26.92 |
| Ir_24_18 | -8.98 | -5.85 | -18.25 | -21.46 | -30.24 |
| Ir_24_19 | -7.12 | -5.47 | -16.82 | -18.73 | -27.49 |
| Ir_24_20 | -3.20 | -5.05 | -12.70 | -17.68 | -25.36 |
| Ir_24_21 | -0.23 | -5.17 | -11.50 | -18.41 | -26.52 |
| Ir_24_22 | 3.19 | -5.45 | -6.73 | -17.28 | -23.27 |
| Ir_24_23 | -1.92 | -4.96 | -15.09 | -19.57 | -29.31 |
| Ir_24_24 | 1.86 | -6.09 | -10.82 | -16.29 | -25.94 |
| Ir_24_25 | -1.47 | -3.61 | -14.42 | -19.37 | -26.53 |
| Ir_24_26 | -4.62 | -3.97 | -15.21 | -17.43 | -26.36 |
| Ir_24_27 | 0.10 | -5.67 | -10.77 | -18.89 | -26.06 |
| Ir_24_28 | -1.28 | -5.60 | -11.90 | -19.43 | -27.26 |
| Ir_25_0 | -7.82 | -3.47 | -21.10 | -24.23 | -32.34 |
| Ir_25_1 | -3.75 | -3.77 | -16.12 | -21.97 | -29.63 |
| Ir_25_2 | -2.19 | -4.79 | -14.30 | -22.15 | -27.13 |
| Ir_25_3 | 0.91 | -3.71 | -10.29 | -18.57 | -24.49 |
| Ir_25_4 | -8.53 | -3.78 | -20.61 | -21.45 | -30.93 |
| Ir_25_5 | -6.45 | -3.17 | -18.20 | -20.76 | -29.81 |
| Ir_25_6 | -5.65 | -3.55 | -19.54 | -19.05 | -30.46 |
| Ir_25_8 | -7.07 | -2.11 | -21.39 | -20.78 | -28.85 |
| Ir_25_9 | -6.52 | -2.88 | -19.79 | -21.95 | -29.40 |
| Ir_25_10 | -7.38 | -3.61 | -20.10 | -20.87 | -29.24 |
| Ir_25_11 | -7.87 | -3.38 | -20.30 | -21.20 | -28.72 |
| Ir_25_12 | -6.39 | -2.80 | -19.74 | -20.68 | -28.19 |
| Ir_25_13 | -1.03 | -2.27 | -12.66 | -18.20 | -22.88 |
| Ir_25_14 | -6.68 | -2.97 | -19.72 | -20.59 | -28.54 |
| Ir_25_16 | -8.55 | -2.83 | -19.36 | -20.04 | -28.49 |
| Ir_25_17 | -8.79 | -3.20 | -19.24 | -20.32 | -28.68 |
| Ir_25_18 | -8.71 | -3.81 | -18.31 | -20.06 | -28.33 |
| Ir_25_19 | -8.28 | -3.75 | -18.73 | -18.93 | -27.12 |
| Ir_25_20 | -5.42 | -4.02 | -15.93 | -17.89 | -26.32 |
| Ir_25_21 | -2.62 | -3.86 | -14.03 | -21.88 | -27.14 |
| Ir_25_22 | 1.55 | -3.52 | -9.34 | -18.53 | -23.73 |
| Ir_25_23 | -2.90 | -4.04 | -15.49 | -21.08 | -28.34 |
| Ir_25_24 | 0.62 | -5.34 | -11.62 | -18.07 | -25.29 |
| Ir_25_25 | -3.29 | -2.17 | -16.94 | -20.16 | -26.77 |
| Ir_25_26 | -8.43 | -3.02 | -18.82 | -19.99 | -28.49 |
| Ir_25_27 | -1.83 | -4.16 | -13.14 | -19.90 | -26.16 |
| Ir_25_28 | -1.03 | -5.34 | -11.23 | -18.89 | -24.51 |
| Ir_26_0 | -9.51 | -4.53 | -21.47 | -22.50 | -33.21 |
| Ir_26_1 | -5.19 | -4.04 | -16.68 | -19.96 | -30.79 |

| | | | | | |
|----------|--------|-------|--------|--------|--------|
| Ir_26_2 | -3.28 | -5.28 | -13.00 | -19.45 | -28.35 |
| Ir_26_3 | -0.29 | -3.83 | -9.51 | -15.52 | -25.86 |
| Ir_26_4 | -10.78 | -4.73 | -22.30 | -22.34 | -29.30 |
| Ir_26_5 | -5.70 | -3.80 | -17.38 | -18.50 | -26.73 |
| Ir_26_6 | -5.53 | -4.67 | -18.84 | -18.61 | -27.01 |
| Ir_26_7 | 7.69 | -3.57 | -2.63 | -13.30 | -20.70 |
| Ir_26_8 | -8.74 | -3.29 | -21.11 | -20.10 | -29.82 |
| Ir_26_9 | -8.87 | -3.74 | -20.88 | -20.67 | -30.64 |
| Ir_26_10 | -9.35 | -4.46 | -19.80 | -21.19 | -30.60 |
| Ir_26_11 | -9.70 | -4.15 | -21.47 | -20.49 | -29.84 |
| Ir_26_12 | -9.78 | -3.14 | -21.71 | -20.58 | -30.54 |
| Ir_26_13 | -3.02 | -3.47 | -12.37 | -17.39 | -24.26 |
| Ir_26_14 | -7.37 | -2.99 | -19.66 | -18.56 | -28.69 |
| Ir_26_16 | -11.74 | -1.82 | -23.59 | -20.66 | -28.66 |
| Ir_26_17 | -9.00 | -4.28 | -19.83 | -19.53 | -25.84 |
| Ir_26_18 | -11.95 | -4.08 | -22.80 | -21.76 | -28.88 |
| Ir_26_19 | -13.07 | -2.63 | -24.05 | -21.77 | -28.47 |
| Ir_26_20 | -6.63 | -4.45 | -17.74 | -18.17 | -24.48 |
| Ir_26_21 | -4.46 | -4.03 | -14.94 | -20.46 | -29.20 |
| Ir_26_22 | -0.65 | -4.89 | -9.52 | -18.28 | -25.01 |
| Ir_26_23 | -4.48 | -4.48 | -14.96 | -20.26 | -30.02 |
| Ir_26_24 | -1.40 | -5.86 | -12.97 | -16.58 | -27.72 |
| Ir_26_26 | -11.45 | -2.38 | -22.83 | -21.52 | -27.88 |
| Ir_26_27 | -4.92 | -4.85 | -13.90 | -19.92 | -28.20 |
| Ir_26_28 | -3.50 | -5.58 | -11.21 | -19.45 | -27.14 |
| Ir_27_0 | -7.11 | -5.10 | -19.83 | -23.43 | -32.40 |
| Ir_27_1 | -3.45 | -4.11 | -15.49 | -21.08 | -29.89 |
| Ir_27_2 | -0.99 | -5.52 | -12.28 | -20.48 | -27.28 |
| Ir_27_3 | 2.01 | -4.43 | -7.82 | -17.29 | -24.28 |
| Ir_27_4 | -8.21 | -4.25 | -19.55 | -21.22 | -30.78 |
| Ir_27_5 | -4.80 | -4.01 | -16.13 | -20.18 | -29.53 |
| Ir_27_6 | -4.74 | -4.25 | -17.73 | -19.01 | -30.35 |
| Ir_27_9 | -5.26 | -3.83 | -18.14 | -21.24 | -28.11 |
| Ir_27_10 | -6.05 | -4.72 | -16.61 | -20.63 | -28.39 |
| Ir_27_11 | -6.60 | -4.90 | -17.76 | -20.96 | -27.60 |
| Ir_27_12 | -4.77 | -4.39 | -16.46 | -19.43 | -26.78 |
| Ir_27_13 | -2.07 | -3.42 | -12.46 | -20.12 | -24.18 |
| Ir_27_14 | -4.37 | -4.14 | -15.94 | -19.29 | -26.48 |
| Ir_27_16 | -7.63 | -4.01 | -17.30 | -20.76 | -29.05 |
| Ir_27_17 | -8.14 | -4.57 | -17.87 | -20.47 | -28.92 |
| Ir_27_18 | -9.32 | -4.94 | -18.75 | -20.80 | -29.60 |
| Ir_27_19 | -7.79 | -5.19 | -16.96 | -20.36 | -27.83 |
| Ir_27_20 | -6.35 | -3.82 | -15.29 | -18.59 | -27.27 |
| Ir_27_21 | -2.47 | -4.21 | -14.40 | -20.74 | -27.86 |
| Ir_27_22 | 2.00 | -4.41 | -7.93 | -18.29 | -23.42 |
| Ir_27_23 | -2.01 | -4.75 | -13.63 | -20.71 | -28.47 |
| Ir_27_24 | 0.28 | -6.10 | -12.05 | -18.37 | -26.85 |
| Ir_27_25 | -1.84 | -3.83 | -14.34 | -20.55 | -25.79 |
| Ir_27_26 | -6.62 | -4.16 | -15.56 | -19.47 | -27.32 |
| Ir_27_27 | -1.40 | -4.57 | -12.35 | -19.55 | -26.19 |
| Ir_27_28 | -1.97 | -5.38 | -11.96 | -19.77 | -26.94 |
| Ir_28_0 | -7.49 | -5.27 | -20.12 | -23.20 | -32.64 |
| Ir_28_1 | -3.20 | -4.57 | -15.03 | -21.19 | -29.79 |
| Ir_28_2 | -1.90 | -5.51 | -13.41 | -21.70 | -28.17 |
| Ir_28_3 | 0.35 | -4.55 | -9.19 | -18.72 | -25.58 |
| Ir_28_4 | -8.19 | -4.39 | -19.23 | -21.25 | -30.86 |
| Ir_28_5 | -3.92 | -4.60 | -13.81 | -18.60 | -27.70 |
| Ir_28_6 | -3.15 | -4.59 | -15.63 | -17.25 | -28.88 |
| Ir_28_8 | -5.37 | -4.04 | -17.09 | -20.28 | -27.68 |
| Ir_28_9 | -5.50 | -4.98 | -15.91 | -21.96 | -28.28 |

| | | | | | |
|----------|-------|-------|--------|--------|--------|
| Ir_28_10 | -6.63 | -5.12 | -17.89 | -20.76 | -29.42 |
| Ir_28_11 | -7.10 | -5.03 | -18.76 | -21.05 | -28.27 |
| Ir_28_12 | -5.75 | -4.57 | -17.11 | -20.77 | -27.90 |
| Ir_28_13 | -0.64 | -3.97 | -11.04 | -18.41 | -22.72 |
| Ir_28_14 | -4.51 | -4.37 | -16.08 | -19.51 | -26.38 |
| Ir_28_16 | -8.31 | -3.83 | -17.32 | -20.70 | -29.09 |
| Ir_28_17 | -6.67 | -4.11 | -16.22 | -19.73 | -26.89 |
| Ir_28_18 | -8.31 | -4.63 | -17.72 | -20.44 | -29.08 |
| Ir_28_19 | -7.29 | -4.26 | -16.89 | -19.19 | -27.86 |
| Ir_28_20 | -5.61 | -4.53 | -15.15 | -19.24 | -26.83 |
| Ir_28_21 | -2.53 | -4.87 | -13.03 | -21.39 | -28.15 |
| Ir_28_22 | 0.97 | -5.16 | -7.88 | -19.76 | -24.31 |
| Ir_28_23 | -2.76 | -4.95 | -14.45 | -20.55 | -29.06 |
| Ir_28_24 | 0.56 | -6.19 | -10.93 | -17.62 | -26.18 |
| Ir_28_25 | -2.64 | -3.34 | -14.92 | -20.63 | -26.67 |
| Ir_28_26 | -6.07 | -4.17 | -15.63 | -18.97 | -27.28 |
| Ir_28_27 | -1.73 | -5.12 | -12.23 | -20.56 | -26.97 |
| Ir_28_28 | -2.46 | -5.53 | -12.13 | -19.92 | -27.38 |

Table S4. DFT computed relative free energies of catalytic cycle intermediates for the out-of-sample data set of catalysts. Values in kcal/mol.

| | $\Delta G(\text{I3})$ | $\Delta G(\text{I4})$ | $\Delta G(\text{I5})$ | $\Delta G(\text{I6})$ | $\Delta G(\text{I7})$ |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Co_23_0 | -7.79 | -4.31 | -29.00 | -27.94 | -28.26 |
| Co_23_1 | -4.68 | -4.76 | -21.64 | -24.87 | -25.90 |
| Co_23_2 | -0.99 | -4.55 | -18.90 | -22.32 | -22.52 |
| Co_23_3 | -2.29 | -3.66 | -20.16 | -21.91 | -21.80 |
| Co_23_4 | -8.94 | -7.98 | -23.31 | -23.22 | -23.09 |
| Co_23_5 | -2.69 | -3.84 | -22.24 | -24.89 | -24.96 |
| Co_23_6 | -6.70 | -3.24 | -25.07 | -19.63 | -28.06 |
| Co_23_7 | 10.60 | 8.10 | -11.65 | -5.15 | -16.73 |
| Co_23_8 | -3.72 | -6.12 | -26.59 | -26.78 | -25.80 |
| Co_23_9 | -4.47 | -7.09 | -27.28 | -24.23 | -22.75 |
| Co_23_10 | -10.83 | -2.68 | -29.02 | -23.18 | -27.37 |
| Co_23_11 | -7.27 | -6.59 | -27.23 | -25.57 | -21.61 |
| Co_23_12 | -7.76 | -6.13 | -30.17 | -24.73 | -21.87 |
| Co_23_13 | 2.20 | -0.49 | -19.04 | -18.98 | -15.13 |
| Co_23_14 | -2.86 | -7.36 | -28.46 | -18.9 | -25.49 |
| Co_23_16 | -13.41 | -9.55 | -28.19 | -31.49 | -24.17 |
| Co_23_17 | -11.29 | -5.10 | -24.05 | -29.46 | -22.54 |
| Co_23_18 | -4.96 | -2.85 | -21.35 | -21.22 | -22.73 |
| Co_23_19 | -8.68 | -8.67 | -24.52 | -18.91 | -20.57 |
| Co_23_20 | -10.19 | -3.12 | -25.74 | -32.72 | -26.00 |
| Co_23_21 | -2.84 | -1.18 | -18.96 | -27.49 | -24.40 |
| Co_23_22 | -4.16 | -2.37 | -17.20 | -26.9 | -20.68 |
| Co_23_23 | -7.77 | -2.13 | -22.76 | -21.89 | -22.44 |
| Co_23_24 | -1.75 | -3.48 | -23.24 | -23.75 | -24.03 |
| Co_23_25 | -3.63 | -3.83 | -26.82 | -25.83 | -13.11 |
| Co_23_26 | -9.73 | -2.86 | -27.73 | -26.92 | -21.92 |
| Co_23_27 | -3.27 | -0.21 | -23.63 | -27.45 | -23.72 |
| Co_23_28 | -2.35 | 0.63 | -21.33 | -25.26 | -19.27 |
| Co_24_0 | -5.52 | -5.61 | -27.89 | -28.07 | -26.49 |
| Co_24_1 | -0.96 | -4.47 | -23.89 | -27.02 | -24.76 |
| Co_24_2 | 0.76 | -5.11 | -20.97 | -26.12 | -18.79 |
| Co_24_3 | 2.94 | -0.42 | -19.73 | -15.35 | -22.35 |
| Co_24_4 | -8.43 | -8.54 | -28.44 | -25.58 | -25.80 |
| Co_24_5 | -10.78 | -8.49 | -24.74 | -28.23 | -23.92 |
| Co_24_6 | 0.45 | 0.29 | -24.45 | -22.44 | -24.79 |
| Co_24_7 | 4.27 | 22.00 | -10.94 | -5.54 | -14.62 |
| Co_24_8 | -5.27 | -7.61 | -27.29 | -23.23 | -22.79 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Co_24_9 | -10.08 | -5.66 | -28.84 | -25.72 | -19.90 |
| Co_24_10 | -8.39 | -8.18 | -28.31 | -24.49 | -21.54 |
| Co_24_11 | -9.21 | -7.86 | -28.92 | -24.52 | -22.82 |
| Co_24_12 | -2.53 | -2.90 | -28.78 | -23.82 | -22.22 |
| Co_24_13 | -2.97 | -0.57 | -13.23 | -24.07 | -19.61 |
| Co_24_14 | 2.65 | -1.40 | -28.36 | -26.41 | -23.24 |
| Co_24_16 | -10.85 | -7.00 | -21.81 | -20.59 | -20.76 |
| Co_24_17 | -4.62 | -3.85 | -24.17 | -29.81 | -21.31 |
| Co_24_18 | -10.04 | -6.65 | -23.34 | -26.17 | -22.79 |
| Co_24_19 | -8.41 | -0.78 | -29.71 | -26.9 | -21.61 |
| Co_24_20 | -5.83 | 1.87 | -23.98 | -26.31 | -21.95 |
| Co_24_21 | -4.85 | 1.75 | -17.40 | -24.49 | -22.17 |
| Co_24_22 | -6.68 | -3.61 | -18.46 | -24.11 | -20.07 |
| Co_24_23 | -2.88 | 0.49 | -24.76 | -25.09 | -20.96 |
| Co_24_24 | 2.00 | -5.96 | -23.54 | -24.2 | -23.42 |
| Co_24_25 | -1.73 | -0.52 | -18.70 | -21.52 | -25.80 |
| Co_24_26 | -5.27 | -3.97 | -22.40 | -20.47 | -25.89 |
| Co_24_27 | -4.02 | -7.87 | -22.29 | -30.19 | -20.49 |
| Co_24_28 | -4.48 | 0.32 | -14.63 | -23.69 | -20.06 |
| Co_25_0 | -12.94 | -7.52 | -29.53 | -29.11 | -24.77 |
| Co_25_1 | -2.10 | -4.46 | -23.55 | -25.46 | -23.32 |
| Co_25_2 | -14.80 | -10.43 | -29.86 | -26.21 | -20.67 |
| Co_25_3 | -4.89 | 2.74 | -15.32 | -20.9 | -19.93 |
| Co_25_4 | -11.15 | -9.73 | -31.20 | -23.06 | -20.58 |
| Co_25_5 | -12.02 | -8.23 | -27.34 | -27.96 | -19.23 |
| Co_25_6 | -7.28 | -1.76 | -18.89 | -27.62 | -21.48 |
| Co_25_8 | -11.73 | -11.18 | -28.39 | -29.77 | -22.61 |
| Co_25_9 | -6.31 | -7.38 | -31.48 | -22.1 | -24.06 |
| Co_25_10 | -8.89 | -0.96 | -26.42 | -19.74 | -25.06 |
| Co_25_11 | -7.10 | -2.00 | -21.95 | -26.74 | -20.34 |
| Co_25_12 | -9.63 | -9.78 | -25.66 | -27.47 | -24.50 |
| Co_25_13 | 11.13 | 13.31 | -14.60 | -15.62 | -8.23 |
| Co_25_14 | -7.44 | -8.87 | -26.23 | -24.24 | -18.28 |
| Co_25_16 | -5.65 | -7.52 | -25.22 | -27.14 | -21.15 |
| Co_25_17 | -2.84 | -6.33 | -25.03 | -27.19 | -17.01 |
| Co_25_18 | -5.49 | -3.83 | -26.05 | -21.68 | -14.17 |
| Co_25_19 | -9.94 | -6.24 | -27.25 | -26.78 | -26.15 |
| Co_25_20 | -12.21 | -4.53 | -26.40 | -22.11 | -19.56 |
| Co_25_21 | -12.50 | -6.63 | -24.78 | -28.68 | -11.04 |
| Co_25_22 | -4.89 | 1.18 | -20.60 | -22.15 | -17.29 |
| Co_25_23 | -2.18 | -0.99 | -22.22 | -20.94 | -14.78 |
| Co_25_24 | -1.12 | -2.09 | -21.04 | -28.07 | -16.77 |
| Co_25_25 | 1.71 | -4.64 | -26.72 | -21.08 | -20.69 |
| Co_25_26 | -7.55 | -0.91 | -28.22 | -20.46 | -22.45 |
| Co_25_27 | 0.95 | -4.11 | -22.40 | -19.57 | -17.20 |
| Co_25_28 | -1.11 | -4.36 | -12.37 | -26.77 | -18.73 |
| Co_26_0 | -11.23 | -3.75 | -27.86 | -24.62 | -26.24 |
| Co_26_1 | -10.71 | -8.56 | -24.84 | -21.32 | -26.52 |
| Co_26_2 | -2.61 | -0.15 | -17.71 | -22.51 | -17.82 |
| Co_26_3 | 0.51 | 2.59 | -14.59 | -14.43 | -13.42 |
| Co_26_4 | -10.61 | -10.31 | -26.76 | -24.19 | -23.41 |
| Co_26_5 | -6.82 | -0.26 | -24.03 | -25.32 | -20.73 |
| Co_26_6 | -4.80 | -8.22 | -21.72 | -25.17 | -21.99 |
| Co_26_7 | -11.46 | 2.66 | -8.46 | -4.74 | -16.52 |
| Co_26_8 | -8.37 | -2.12 | -29.54 | -23.9 | -26.65 |
| Co_26_9 | -11.11 | -9.09 | -25.81 | -21.56 | -26.17 |
| Co_26_10 | -9.42 | -11.57 | -26.77 | -26.54 | -21.74 |
| Co_26_11 | -13.94 | -11.17 | -26.99 | -25.27 | -24.70 |
| Co_26_12 | -12.75 | -6.86 | -31.77 | -25.07 | -29.33 |
| Co_26_13 | -8.42 | 1.17 | -24.32 | -19.62 | -21.41 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Co_26_14 | -6.06 | -2.08 | -23.86 | -19.93 | -23.04 |
| Co_26_16 | -12.62 | -14.90 | -29.45 | -26.15 | -24.99 |
| Co_26_17 | -12.98 | -10.30 | -29.96 | -24.17 | -19.38 |
| Co_26_18 | -15.71 | -8.02 | -30.02 | -23.17 | -25.91 |
| Co_26_19 | -13.97 | -4.03 | -29.21 | -28.28 | -17.99 |
| Co_26_20 | -8.52 | -7.22 | -31.67 | -26.73 | -20.42 |
| Co_26_21 | -14.05 | -7.80 | -21.14 | -26.61 | -24.11 |
| Co_26_22 | -7.48 | 1.49 | -18.14 | -24.44 | -13.08 |
| Co_26_23 | -5.71 | -5.93 | -22.36 | -26.35 | -21.46 |
| Co_26_24 | -12.95 | -7.63 | -27.46 | -28.8 | -23.99 |
| Co_26_26 | -13.90 | -5.42 | -23.96 | 79.23 | -21.43 |
| Co_26_27 | -10.09 | -3.82 | -30.29 | -20.24 | -22.08 |
| Co_26_28 | -8.77 | -2.68 | -21.42 | -24.6 | -15.20 |
| Co_27_0 | -12.68 | -7.66 | -26.18 | -30.67 | -25.79 |
| Co_27_1 | -5.07 | -6.32 | -23.62 | -27.63 | -22.22 |
| Co_27_2 | 9.37 | -5.39 | -19.16 | -13.88 | -27.15 |
| Co_27_3 | 1.63 | 3.35 | -13.89 | -21.59 | -18.84 |
| Co_27_4 | -8.37 | -8.79 | -27.41 | -24.89 | -23.70 |
| Co_27_5 | -8.37 | -3.40 | -26.85 | -28.87 | -23.06 |
| Co_27_6 | -1.60 | -5.39 | -29.32 | -25 | -20.82 |
| Co_27_8 | -11.89 | -8.26 | -29.01 | -34.17 | -31.56 |
| Co_27_9 | -8.65 | -1.92 | -24.76 | -25.77 | -25.69 |
| Co_27_10 | -8.37 | -4.06 | -21.16 | -20.95 | -28.32 |
| Co_27_11 | -8.27 | -5.81 | -27.70 | -26 | -22.43 |
| Co_27_12 | -3.59 | -7.07 | -25.80 | -29.21 | -28.22 |
| Co_27_13 | -3.14 | -3.25 | -10.02 | -13.58 | -14.51 |
| Co_27_14 | -9.30 | 0.03 | -26.98 | -26.01 | -22.34 |
| Co_27_16 | -11.32 | -9.27 | -24.35 | -31.35 | -21.72 |
| Co_27_17 | -15.03 | -5.89 | -26.55 | -20.88 | -23.24 |
| Co_27_18 | -9.88 | -0.09 | -27.45 | -29.48 | -25.18 |
| Co_27_19 | -8.58 | -6.02 | -18.95 | -18.18 | -20.94 |
| Co_27_20 | -9.45 | -6.00 | -28.09 | -23.32 | -17.66 |
| Co_27_21 | 2.98 | 0.87 | -17.63 | -20.84 | -12.40 |
| Co_27_22 | 1.81 | 0.21 | -14.58 | -25.95 | -22.14 |
| Co_27_23 | -7.15 | -4.35 | -22.29 | -28.55 | -23.43 |
| Co_27_24 | -10.06 | -8.40 | -24.66 | -20.45 | -27.17 |
| Co_27_25 | -7.85 | 1.35 | -21.94 | -22.81 | -12.05 |
| Co_27_26 | -10.15 | -2.71 | -29.03 | -22.88 | -22.26 |
| Co_27_27 | -5.22 | -4.04 | -22.40 | -22.92 | -21.13 |
| Co_27_28 | -3.83 | -5.27 | -19.22 | -20.87 | -18.37 |
| Co_28_0 | -11.60 | -6.38 | -29.90 | -31.09 | -24.97 |
| Co_28_1 | -8.60 | -6.72 | -22.50 | -20.2 | -27.98 |
| Co_28_2 | -5.93 | -9.18 | -22.40 | -31.93 | -26.71 |
| Co_28_3 | 7.33 | -0.03 | -15.39 | -18.13 | -19.81 |
| Co_28_4 | -15.19 | -15.79 | -28.51 | -28.06 | -28.93 |
| Co_28_5 | -6.83 | -0.14 | -19.43 | -18.1 | -20.86 |
| Co_28_6 | 2.14 | -5.10 | -22.22 | -19.09 | -22.87 |
| Co_28_8 | -8.29 | -1.13 | -23.94 | -22.15 | -24.48 |
| Co_28_9 | -9.67 | -2.45 | -27.06 | -28.68 | -28.54 |
| Co_28_10 | -8.07 | -7.18 | -27.62 | -28.7 | -21.57 |
| Co_28_11 | -8.41 | -4.93 | -27.53 | -28.42 | -21.17 |
| Co_28_12 | -8.83 | -8.89 | -19.42 | -26.45 | -29.33 |
| Co_28_13 | 8.42 | -1.61 | -9.60 | -16.45 | -11.74 |
| Co_28_14 | -7.53 | -5.38 | -28.71 | -27.85 | -23.02 |
| Co_28_16 | -13.98 | -11.56 | -25.60 | -22.24 | -21.47 |
| Co_28_17 | -7.94 | 2.58 | -16.21 | -15.69 | -20.98 |
| Co_28_18 | -11.40 | -1.49 | -19.53 | -21.33 | -18.37 |
| Co_28_19 | -9.41 | -4.73 | -22.74 | -19.49 | -21.95 |
| Co_28_20 | -7.90 | -4.19 | -21.09 | -22.59 | -19.23 |
| Co_28_21 | -5.68 | -5.09 | -19.92 | -22.88 | -20.00 |

| | | | | | |
|----------|--------|-------|--------|--------|--------|
| Co_28_22 | 2.88 | 0.80 | -19.28 | -20.55 | -23.02 |
| Co_28_23 | -2.16 | -5.21 | -25.61 | -22.78 | -23.22 |
| Co_28_24 | -8.12 | -1.99 | -26.03 | -25.11 | -25.79 |
| Co_28_25 | -9.73 | -5.56 | -27.84 | -24.88 | -20.98 |
| Co_28_26 | -11.77 | -8.99 | -24.77 | -23.34 | -18.37 |
| Co_28_27 | -2.06 | -3.03 | -24.09 | -25.83 | -17.56 |
| Co_28_28 | 0.72 | -1.38 | -21.76 | -25.07 | -18.27 |
| Rh_23_0 | 1.12 | -4.91 | -15.31 | -22.48 | -20.60 |
| Rh_23_1 | 3.77 | -5.50 | -9.31 | -23.02 | -19.44 |
| Rh_23_2 | 4.89 | -2.98 | -9.61 | -22.74 | -17.79 |
| Rh_23_3 | 4.53 | -5.34 | -8.21 | -18.46 | -14.98 |
| Rh_23_4 | -0.26 | -5.86 | -10.92 | -19.71 | -15.12 |
| Rh_23_5 | 7.44 | -2.85 | -9.84 | -17.92 | -16.10 |
| Rh_23_6 | 2.51 | -2.76 | -11.97 | -18.83 | -18.31 |
| Rh_23_7 | 14.80 | 5.81 | -2.27 | -3.8 | -11.77 |
| Rh_23_8 | 4.32 | -3.92 | -15.11 | -22.8 | -17.89 |
| Rh_23_9 | 1.72 | -7.07 | -16.70 | -24.88 | -17.33 |
| Rh_23_10 | -2.43 | -1.61 | -16.84 | -19.83 | -18.35 |
| Rh_23_11 | -1.08 | -6.91 | -18.02 | -26.03 | -16.57 |
| Rh_23_12 | 2.53 | -3.18 | -17.85 | -14.14 | -13.98 |
| Rh_23_13 | 6.96 | -3.78 | -9.48 | -20.46 | -9.09 |
| Rh_23_14 | 4.21 | -6.41 | -17.16 | -17.83 | -17.56 |
| Rh_23_16 | -4.37 | -3.16 | -15.60 | -25.76 | -14.15 |
| Rh_23_17 | -1.85 | -5.27 | -11.65 | -23.61 | -11.76 |
| Rh_23_18 | 2.66 | -4.32 | -10.39 | -20.62 | -12.91 |
| Rh_23_19 | -0.09 | -3.22 | -13.08 | -18.55 | -13.20 |
| Rh_23_20 | -0.79 | -6.01 | -14.22 | -26.78 | -18.40 |
| Rh_23_21 | 6.63 | 0.70 | -7.29 | -24.18 | -13.96 |
| Rh_23_22 | 3.69 | -3.29 | -5.53 | -23.25 | -13.90 |
| Rh_23_23 | 1.27 | -3.40 | -11.29 | -21.73 | -16.11 |
| Rh_23_24 | 7.18 | -0.11 | -11.00 | -22.85 | -17.70 |
| Rh_23_25 | 3.98 | -5.01 | -15.56 | -23.37 | -5.84 |
| Rh_23_26 | -0.44 | -4.46 | -16.31 | -22.24 | -14.77 |
| Rh_23_27 | 7.33 | 0.74 | -9.79 | -24.93 | -14.74 |
| Rh_23_28 | 5.77 | -2.87 | -10.74 | -25.63 | -11.64 |
| Rh_24_0 | 2.10 | -6.39 | -14.33 | -22.08 | -19.57 |
| Rh_24_1 | 5.40 | -5.64 | -11.97 | -24.14 | -18.25 |
| Rh_24_2 | 6.82 | -1.50 | -9.97 | -16.4 | -14.73 |
| Rh_24_3 | 7.83 | -2.42 | -8.17 | -13.45 | -16.47 |
| Rh_24_4 | 0.83 | -5.96 | -15.53 | -21.41 | -17.53 |
| Rh_24_5 | 1.90 | -2.32 | -11.70 | -20.96 | -14.87 |
| Rh_24_6 | 13.21 | 1.11 | -11.23 | -20.06 | -15.15 |
| Rh_24_7 | 8.24 | 20.65 | -1.01 | -3.89 | -10.86 |
| Rh_24_8 | 0.61 | -6.01 | -16.23 | -23.32 | -17.18 |
| Rh_24_9 | -14.40 | -5.81 | -18.91 | -26.65 | -16.15 |
| Rh_24_10 | 1.73 | -6.79 | -16.69 | -20.49 | -14.29 |
| Rh_24_11 | -1.48 | -5.17 | -16.82 | -22.27 | -15.33 |
| Rh_24_12 | 4.68 | -5.33 | -18.25 | -20.87 | -16.22 |
| Rh_24_13 | 2.03 | -4.55 | -1.93 | -22.97 | -13.59 |
| Rh_24_14 | 8.29 | -0.05 | -17.27 | -23.33 | -17.46 |
| Rh_24_16 | -0.84 | -5.14 | -9.66 | -22.76 | -12.63 |
| Rh_24_17 | 3.46 | -6.47 | -11.98 | -25.8 | -13.08 |
| Rh_24_18 | -1.76 | -8.10 | -10.39 | -26.44 | -14.85 |
| Rh_24_19 | -1.10 | -2.21 | -17.20 | -20.11 | -14.69 |
| Rh_24_20 | 4.76 | 2.63 | -10.59 | -19.43 | -12.93 |
| Rh_24_21 | 5.77 | 3.62 | -5.08 | -20.37 | -13.11 |
| Rh_24_22 | 4.94 | -2.79 | -3.30 | -20.44 | -9.94 |
| Rh_24_23 | 3.91 | 0.85 | -12.35 | -23.5 | -14.64 |
| Rh_24_24 | 8.04 | -2.65 | -11.64 | -23.76 | -17.64 |
| Rh_24_25 | 2.96 | -3.81 | -8.40 | -22.24 | -19.51 |

| | | | | | |
|----------|-------|--------|--------|--------|--------|
| Rh_24_26 | 4.51 | 1.59 | -11.12 | -15.97 | -15.35 |
| Rh_24_27 | 1.98 | -10.66 | -12.40 | -30.04 | -15.00 |
| Rh_24_28 | 3.16 | 0.15 | -4.69 | -22.57 | -12.35 |
| Rh_25_0 | -2.72 | -9.09 | -17.43 | -27.09 | -17.06 |
| Rh_25_1 | 3.47 | -6.70 | -12.69 | -24.56 | -16.49 |
| Rh_25_2 | -7.34 | -12.23 | -18.15 | -26.55 | -15.78 |
| Rh_25_3 | 2.10 | 0.54 | -4.61 | -18.99 | -13.48 |
| Rh_25_4 | -2.92 | -10.76 | -18.24 | -16.53 | -10.43 |
| Rh_25_5 | 0.03 | -6.80 | -10.29 | -26.52 | -10.88 |
| Rh_25_6 | 4.45 | -4.02 | -7.53 | -29.58 | -15.87 |
| Rh_25_8 | -5.44 | -8.30 | -17.57 | -24.68 | -16.19 |
| Rh_25_9 | -0.87 | -4.37 | -20.92 | -19.33 | -17.87 |
| Rh_25_10 | -1.73 | -2.00 | -15.48 | -19.89 | -18.75 |
| Rh_25_11 | -1.06 | 3.01 | -11.83 | -22.18 | -14.57 |
| Rh_25_12 | -2.79 | -7.21 | -15.60 | -26.95 | -14.31 |
| Rh_25_13 | 14.02 | 11.60 | -5.31 | -15.13 | 3.05 |
| Rh_25_14 | -0.36 | -0.64 | -15.34 | -20.26 | -11.92 |
| Rh_25_16 | 1.15 | -6.77 | -14.50 | -26.83 | -13.41 |
| Rh_25_17 | 2.34 | -0.14 | -14.46 | -21.12 | -9.25 |
| Rh_25_18 | 1.79 | -5.81 | -13.24 | -20.73 | -7.61 |
| Rh_25_19 | -0.14 | -4.22 | -10.16 | -25.25 | -15.86 |
| Rh_25_20 | -1.53 | -4.13 | -12.82 | -23.43 | -9.97 |
| Rh_25_21 | -4.42 | -8.12 | -13.50 | -27.39 | -5.89 |
| Rh_25_22 | 1.55 | 1.86 | -12.19 | -13.14 | -10.73 |
| Rh_25_23 | 4.79 | -2.85 | -11.42 | -21.57 | -9.06 |
| Rh_25_24 | 4.30 | -2.15 | -9.00 | -22.32 | -10.02 |
| Rh_25_25 | 6.01 | -6.72 | -5.08 | -15.9 | -14.27 |
| Rh_25_26 | 1.36 | 0.99 | -15.50 | -18.77 | -14.74 |
| Rh_25_27 | 5.53 | -5.64 | -11.51 | -20.08 | -11.45 |
| Rh_25_28 | 7.20 | -5.49 | -0.22 | -24.73 | -11.38 |
| Rh_26_0 | -1.25 | -4.31 | -14.95 | -18.06 | -16.83 |
| Rh_26_1 | -1.50 | -7.32 | -12.15 | -20.87 | -18.05 |
| Rh_26_2 | 5.36 | -1.70 | -5.41 | -21.89 | -10.95 |
| Rh_26_3 | 4.35 | -1.54 | -6.85 | -17.62 | -9.61 |
| Rh_26_4 | -2.72 | -7.34 | -15.93 | -21.48 | -15.66 |
| Rh_26_5 | 2.93 | 0.40 | -10.33 | -21.37 | -10.55 |
| Rh_26_6 | 2.74 | -9.65 | -8.01 | -23.98 | -13.53 |
| Rh_26_7 | -6.19 | -2.99 | -0.61 | -5.64 | -12.23 |
| Rh_26_8 | -1.40 | -4.22 | -20.14 | -26.61 | -20.21 |
| Rh_26_9 | -5.34 | -7.35 | -16.41 | -19.81 | -20.37 |
| Rh_26_10 | -0.14 | -7.30 | -13.69 | -20.93 | -12.82 |
| Rh_26_11 | -8.56 | -7.81 | -18.30 | -25.65 | -19.90 |
| Rh_26_12 | -8.43 | -8.99 | -23.58 | -24.44 | -23.37 |
| Rh_26_13 | 1.95 | 2.96 | -11.00 | -14.59 | -11.29 |
| Rh_26_14 | -0.09 | -1.86 | -14.21 | -21.27 | -14.60 |
| Rh_26_16 | -3.48 | -8.73 | -17.97 | -21.25 | -15.98 |
| Rh_26_17 | -3.73 | -2.51 | -17.26 | -17.94 | -10.25 |
| Rh_26_18 | -5.64 | -8.69 | -17.86 | -22.52 | -16.09 |
| Rh_26_19 | -4.98 | -6.55 | -17.18 | -22.62 | -10.86 |
| Rh_26_20 | 2.74 | 2.39 | -14.77 | -19.27 | -8.24 |
| Rh_26_21 | -5.07 | -8.53 | -9.18 | -24.99 | -15.08 |
| Rh_26_22 | 1.85 | 2.20 | -5.55 | -22.34 | -3.81 |
| Rh_26_23 | 5.08 | -3.75 | -8.04 | -23.49 | -10.11 |
| Rh_26_24 | -2.73 | -7.46 | -14.25 | -21.31 | -15.36 |
| Rh_26_26 | -5.28 | -7.81 | -11.25 | -23.58 | -14.77 |
| Rh_26_27 | -4.82 | -8.82 | -22.72 | -21.65 | -15.85 |
| Rh_26_28 | 0.37 | -2.43 | -8.34 | -23.48 | -7.73 |
| Rh_27_0 | -1.66 | -7.34 | -12.49 | -24.71 | -17.85 |
| Rh_27_1 | 3.17 | -8.77 | -12.18 | -21.99 | -15.78 |
| Rh_27_2 | 14.98 | -6.81 | -8.14 | -11.98 | -19.58 |

| | | | | | |
|----------|-------|--------|--------|--------|--------|
| Rh_27_3 | 4.52 | 0.39 | -5.31 | -20.71 | -15.60 |
| Rh_27_4 | 2.69 | -4.96 | -11.15 | -20.22 | -13.60 |
| Rh_27_5 | 0.81 | -4.47 | -14.46 | -22.87 | -14.65 |
| Rh_27_6 | 6.14 | -5.70 | -16.93 | -22.43 | -13.45 |
| Rh_27_8 | -2.65 | -9.00 | -14.35 | -26.02 | -22.09 |
| Rh_27_9 | -2.27 | -3.69 | -15.34 | -20.39 | -20.61 |
| Rh_27_10 | -2.51 | -7.56 | -11.74 | -18.79 | -22.01 |
| Rh_27_11 | 0.47 | -5.80 | -16.25 | -18.06 | -11.19 |
| Rh_27_12 | 4.08 | -7.51 | -12.84 | -27.49 | -20.26 |
| Rh_27_13 | 0.30 | -5.74 | -1.97 | -14.01 | -8.87 |
| Rh_27_14 | -0.89 | -1.25 | -15.08 | -23.4 | -15.20 |
| Rh_27_16 | 0.54 | -7.73 | -9.13 | -24.64 | -11.67 |
| Rh_27_17 | -8.07 | -8.85 | -17.27 | -23.46 | -16.30 |
| Rh_27_18 | -2.20 | -2.38 | -17.77 | -28.9 | -18.27 |
| Rh_27_19 | 2.98 | -2.38 | -5.56 | -15.1 | -9.34 |
| Rh_27_20 | -3.66 | -8.43 | -18.71 | -24.11 | -12.02 |
| Rh_27_21 | 7.61 | 0.30 | -9.38 | -21.14 | -8.92 |
| Rh_27_22 | 7.54 | -2.19 | -3.80 | -25.85 | -15.00 |
| Rh_27_23 | 2.62 | -0.95 | -7.27 | -25.27 | -14.51 |
| Rh_27_24 | -0.58 | -7.17 | -11.74 | -19.73 | -19.31 |
| Rh_27_25 | -3.90 | -2.74 | -13.38 | -26.25 | -9.87 |
| Rh_27_26 | 1.76 | -0.05 | -13.29 | -19.49 | -9.97 |
| Rh_27_27 | 3.15 | -5.20 | -2.58 | -23.19 | -13.98 |
| Rh_27_28 | 5.47 | -6.70 | -8.13 | -18.75 | -10.68 |
| Rh_28_0 | -1.32 | -6.81 | -15.93 | -26.91 | -17.75 |
| Rh_28_1 | 0.75 | -7.16 | -10.14 | -16.83 | -18.40 |
| Rh_28_2 | 2.50 | -10.06 | -9.93 | -30.23 | -18.45 |
| Rh_28_3 | 14.44 | -1.47 | -4.66 | -17.94 | -13.69 |
| Rh_28_4 | -0.84 | -6.53 | -7.89 | -21.76 | -15.04 |
| Rh_28_5 | 4.58 | -0.80 | -7.68 | -13.49 | -12.99 |
| Rh_28_6 | 16.86 | -2.84 | -10.37 | -19.42 | -15.18 |
| Rh_28_8 | -1.38 | -3.85 | -12.70 | -22.71 | -17.57 |
| Rh_28_9 | 0.35 | -2.00 | -13.80 | -24.53 | -19.89 |
| Rh_28_10 | -3.32 | -11.97 | -20.69 | -27.97 | -17.84 |
| Rh_28_11 | -1.06 | -7.21 | -16.57 | -26.75 | -15.07 |
| Rh_28_12 | -2.07 | -7.21 | -8.91 | -24.94 | -17.87 |
| Rh_28_13 | 13.70 | -4.39 | 0.11 | -16.19 | -8.36 |
| Rh_28_14 | -0.07 | -0.82 | -18.26 | -27.93 | -15.31 |
| Rh_28_16 | -2.31 | -4.94 | -12.23 | -20.19 | -10.07 |
| Rh_28_17 | 0.20 | -0.66 | -5.26 | -17.24 | -12.87 |
| Rh_28_18 | -3.41 | -3.11 | -7.38 | -21.66 | -10.14 |
| Rh_28_19 | -1.08 | 0.96 | -10.20 | -20.85 | -13.54 |
| Rh_28_20 | 0.56 | -3.64 | -8.96 | -19.05 | -11.15 |
| Rh_28_21 | 3.16 | -4.52 | -7.57 | -20.69 | -5.14 |
| Rh_28_22 | 9.64 | -2.02 | -9.10 | -20.18 | -14.87 |
| Rh_28_23 | 7.06 | -5.51 | -7.89 | -17.61 | -15.02 |
| Rh_28_24 | 2.81 | -0.79 | -10.29 | -20.6 | -16.81 |
| Rh_28_25 | -2.87 | -8.38 | -17.18 | -24.54 | -15.43 |
| Rh_28_26 | -0.62 | -5.06 | -9.17 | -19.1 | -6.71 |
| Rh_28_27 | 7.01 | -3.93 | -11.05 | -24.56 | -9.31 |
| Rh_28_28 | 7.21 | -2.05 | -10.25 | -20.13 | -10.42 |
| Ir_23_0 | -4.84 | -5.89 | -20.59 | -21.64 | -34.85 |
| Ir_23_1 | -2.53 | -6.61 | -14.15 | -23.24 | -34.00 |
| Ir_23_2 | -1.38 | -3.93 | -14.85 | -22.69 | -32.99 |
| Ir_23_3 | -1.48 | -6.40 | -13.41 | -18.84 | -29.78 |
| Ir_23_4 | -7.05 | -7.14 | -16.66 | -19.71 | -29.14 |
| Ir_23_5 | 0.04 | -4.45 | -15.87 | -17.75 | -30.28 |
| Ir_23_6 | -3.79 | -3.84 | -17.76 | -18.48 | -32.10 |
| Ir_23_7 | 9.14 | 3.76 | -7.12 | -3.92 | -26.26 |
| Ir_23_8 | -1.34 | -4.73 | -20.19 | -21.76 | -32.37 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Ir_23_9 | -4.13 | -8.02 | -21.89 | -24 | -31.93 |
| Ir_23_10 | -8.79 | -1.81 | -21.84 | -19.21 | -32.64 |
| Ir_23_11 | -7.06 | -7.91 | -23.26 | -24.33 | -31.09 |
| Ir_23_12 | -3.18 | -3.54 | -23.27 | -11.24 | -28.08 |
| Ir_23_13 | 2.23 | -4.78 | -13.77 | -19.73 | -23.29 |
| Ir_23_14 | -1.80 | -7.53 | -4.13 | -15.9 | -31.87 |
| Ir_23_16 | -11.96 | -5.19 | -22.22 | -25.67 | -28.84 |
| Ir_23_17 | -6.87 | -4.08 | -15.09 | -20.88 | -23.83 |
| Ir_23_18 | -4.56 | -5.87 | -16.99 | -20.24 | -27.45 |
| Ir_23_19 | -7.34 | -4.53 | -19.20 | -17.86 | -27.88 |
| Ir_23_20 | -7.29 | -6.57 | -19.53 | -26.21 | -32.31 |
| Ir_23_21 | 0.81 | -0.12 | -12.06 | -23.24 | -28.26 |
| Ir_23_22 | -2.68 | -4.20 | -10.33 | -22.95 | -27.87 |
| Ir_23_23 | -4.40 | -4.63 | -16.45 | -21.14 | -30.62 |
| Ir_23_24 | 1.27 | -1.10 | -15.82 | -22.25 | -32.07 |
| Ir_23_25 | -1.87 | -4.13 | -20.65 | -22.4 | -22.83 |
| Ir_23_26 | -9.54 | -6.12 | -22.20 | -21.72 | -29.29 |
| Ir_23_27 | 2.03 | 0.81 | -14.37 | -23.84 | -28.77 |
| Ir_23_28 | -0.12 | -4.16 | -15.81 | -24.69 | -25.45 |
| Ir_24_0 | -3.55 | -7.46 | -19.46 | -21.93 | -33.77 |
| Ir_24_1 | -0.39 | -6.55 | -17.10 | -23.8 | -33.08 |
| Ir_24_2 | 0.98 | -2.83 | -15.29 | -13.29 | -28.34 |
| Ir_24_3 | 1.86 | -3.22 | -13.35 | -12.42 | -30.52 |
| Ir_24_4 | -6.23 | -7.35 | -21.93 | -21.46 | -32.10 |
| Ir_24_5 | -4.53 | -3.46 | -18.08 | -21.02 | -29.52 |
| Ir_24_6 | 5.90 | -0.48 | -18.03 | -20.82 | -28.98 |
| Ir_24_7 | 2.95 | 20.14 | -6.07 | -3.72 | -25.96 |
| Ir_24_8 | -5.71 | -6.11 | -21.47 | -22.44 | -31.74 |
| Ir_24_9 | -11.86 | -7.04 | -23.82 | -25.67 | -29.82 |
| Ir_24_10 | -4.98 | -8.49 | -22.59 | -19.54 | -28.97 |
| Ir_24_11 | -7.80 | -6.27 | -22.16 | -21.04 | -29.40 |
| Ir_24_12 | -1.13 | -6.35 | -23.79 | -21.1 | -29.97 |
| Ir_24_13 | -3.27 | -5.81 | -6.12 | -22.73 | -27.46 |
| Ir_24_14 | 2.02 | -1.64 | -22.56 | -22.92 | -31.13 |
| Ir_24_16 | -8.41 | -6.67 | -15.82 | -22.21 | -27.82 |
| Ir_24_17 | -2.04 | -7.32 | -16.93 | -24.36 | -26.90 |
| Ir_24_18 | -8.12 | -8.82 | -16.03 | -25.75 | -28.65 |
| Ir_24_19 | -7.56 | -2.84 | -22.88 | -19.68 | -28.84 |
| Ir_24_20 | -2.52 | 2.39 | -16.71 | -19.19 | -26.67 |
| Ir_24_21 | 0.15 | -0.21 | -10.45 | -20.27 | -27.54 |
| Ir_24_22 | -1.16 | -3.99 | -7.68 | -19.94 | -24.28 |
| Ir_24_23 | -1.43 | -0.03 | -17.23 | -22.37 | -28.58 |
| Ir_24_24 | 1.97 | -3.34 | -16.57 | -22.88 | -31.85 |
| Ir_24_25 | -3.91 | -4.98 | -13.51 | -23.08 | -34.02 |
| Ir_24_26 | -3.48 | -1.23 | -18.29 | -16.71 | -30.71 |
| Ir_24_27 | -3.49 | -11.33 | -17.01 | -29.51 | -28.58 |
| Ir_24_28 | -2.63 | -0.46 | -9.56 | -21.31 | -26.80 |
| Ir_25_0 | -9.30 | -9.94 | -22.77 | -26.55 | -31.81 |
| Ir_25_1 | -3.06 | -7.39 | -18.28 | -24.42 | -31.69 |
| Ir_25_2 | -14.49 | -13.41 | -23.59 | -25.6 | -31.09 |
| Ir_25_3 | -4.13 | -0.87 | -9.33 | -18.26 | -27.78 |
| Ir_25_4 | -9.67 | -11.59 | -24.08 | -16.08 | -25.03 |
| Ir_25_5 | -3.57 | -5.73 | -14.11 | -23.51 | -23.42 |
| Ir_25_6 | -2.53 | -6.32 | -12.99 | -27.82 | -30.26 |
| Ir_25_8 | -11.45 | -8.54 | -21.37 | -22.99 | -30.96 |
| Ir_25_9 | -7.34 | -4.78 | -25.60 | -18.55 | -32.78 |
| Ir_25_10 | -7.86 | -3.67 | -20.30 | -19.64 | -33.20 |
| Ir_25_11 | -7.26 | 0.05 | -16.90 | -22.54 | -28.90 |
| Ir_25_12 | -9.09 | -9.01 | -20.50 | -26.62 | -28.98 |
| Ir_25_13 | 9.33 | 11.55 | -10.32 | -13.97 | -11.80 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Ir_25_14 | -6.33 | -0.78 | -19.58 | -19.37 | -26.46 |
| Ir_25_16 | -5.81 | -8.18 | -20.93 | -25.92 | -27.71 |
| Ir_25_17 | -6.25 | -2.35 | -21.64 | -20.45 | -24.58 |
| Ir_25_18 | -5.61 | -6.59 | -19.04 | -18.93 | -22.63 |
| Ir_25_19 | -8.08 | -6.87 | -16.57 | -25.71 | -32.00 |
| Ir_25_20 | -8.53 | -5.36 | -18.73 | -22.75 | -24.57 |
| Ir_25_21 | -11.00 | -9.20 | -19.13 | -27.15 | -20.47 |
| Ir_25_22 | -4.36 | -0.17 | -17.32 | -13.09 | -25.31 |
| Ir_25_23 | -2.39 | -4.12 | -16.67 | -20.64 | -25.01 |
| Ir_25_24 | -2.62 | -3.65 | -15.26 | -23.88 | -25.59 |
| Ir_25_25 | 0.17 | -7.68 | -8.76 | -13.77 | -29.39 |
| Ir_25_26 | -4.32 | -1.40 | -21.54 | -18.05 | -29.85 |
| Ir_25_27 | -0.49 | -4.61 | -16.18 | -19.34 | -26.11 |
| Ir_25_28 | 1.39 | -7.00 | -4.10 | -23.87 | -26.05 |
| Ir_26_0 | -7.10 | -3.83 | -19.62 | -16.44 | -30.06 |
| Ir_26_1 | -8.09 | -8.64 | -18.14 | -20.62 | -32.76 |
| Ir_26_2 | -1.27 | -2.67 | -10.58 | -20.86 | -24.79 |
| Ir_26_3 | -2.17 | -3.85 | -13.16 | -18.41 | -24.67 |
| Ir_26_4 | -9.28 | -8.65 | -22.06 | -21.32 | -30.16 |
| Ir_26_5 | -4.47 | -1.06 | -16.31 | -21.27 | -25.04 |
| Ir_26_6 | -4.68 | -10.59 | -13.12 | -23.14 | -27.93 |
| Ir_26_7 | -13.00 | -4.65 | -6.44 | -3.72 | -26.78 |
| Ir_26_8 | -7.64 | -5.30 | -25.81 | -25.84 | -33.81 |
| Ir_26_9 | -12.48 | -9.15 | -22.63 | -23.13 | -34.55 |
| Ir_26_10 | -7.50 | -6.07 | -19.34 | -20.11 | -27.61 |
| Ir_26_11 | -15.01 | -9.33 | -24.78 | -25.73 | -34.66 |
| Ir_26_12 | -13.94 | -10.14 | -28.46 | -22.83 | -37.42 |
| Ir_26_13 | -4.22 | 1.48 | -17.17 | -13.58 | -25.64 |
| Ir_26_14 | -8.21 | -3.91 | -21.11 | -21.1 | -29.98 |
| Ir_26_16 | -10.53 | -10.57 | -24.45 | -21.32 | -30.86 |
| Ir_26_17 | -10.96 | -4.50 | -24.06 | -16.99 | -24.37 |
| Ir_26_18 | -12.51 | -10.21 | -24.42 | -22.25 | -31.20 |
| Ir_26_19 | -11.06 | -7.28 | -23.64 | -22.27 | -25.88 |
| Ir_26_20 | -4.20 | 0.78 | -20.93 | -18.88 | -23.84 |
| Ir_26_21 | -11.14 | -8.34 | -14.80 | -24.08 | -29.42 |
| Ir_26_22 | -4.33 | 1.52 | -10.72 | -21.5 | -17.20 |
| Ir_26_23 | -1.87 | -4.49 | -13.50 | -22.18 | -24.89 |
| Ir_26_24 | -9.45 | -8.93 | -20.50 | -21.92 | -30.15 |
| Ir_26_26 | -11.23 | -8.56 | -16.61 | -23.87 | -29.15 |
| Ir_26_27 | -11.89 | -11.18 | -29.62 | -21.54 | -31.28 |
| Ir_26_28 | -6.72 | -4.09 | -14.00 | -23.35 | -22.90 |
| Ir_27_0 | -7.86 | -8.10 | -17.26 | -24.06 | -32.06 |
| Ir_27_1 | -2.68 | -9.31 | -16.89 | -21.16 | -29.01 |
| Ir_27_2 | 8.38 | -7.63 | -13.07 | -11.31 | -33.98 |
| Ir_27_3 | -1.09 | -1.19 | -10.00 | -20.59 | -29.82 |
| Ir_27_4 | -5.47 | -6.65 | -17.50 | -21.47 | -27.76 |
| Ir_27_5 | -4.72 | -5.48 | -20.15 | -22.32 | -28.83 |
| Ir_27_6 | -0.40 | -6.07 | -22.52 | -21.77 | -26.98 |
| Ir_27_9 | -9.29 | -6.11 | -21.40 | -20.26 | -35.38 |
| Ir_27_10 | -8.41 | -8.43 | -16.39 | -18.62 | -35.74 |
| Ir_27_11 | -5.86 | -6.71 | -21.71 | -16.87 | -24.69 |
| Ir_27_12 | -2.63 | -8.83 | -18.09 | -27.62 | -34.65 |
| Ir_27_13 | -5.32 | -6.54 | -4.75 | -13.1 | -22.90 |
| Ir_27_14 | -7.16 | -2.88 | -19.99 | -23.25 | -29.85 |
| Ir_27_16 | -5.42 | -7.67 | -14.15 | -23.86 | -26.67 |
| Ir_27_17 | -14.57 | -9.93 | -22.54 | -22.22 | -29.78 |
| Ir_27_18 | -8.12 | -2.98 | -22.99 | -27.02 | -31.88 |
| Ir_27_19 | -4.58 | -3.71 | -11.51 | -14.87 | -23.60 |
| Ir_27_20 | -10.34 | -9.91 | -24.53 | -23.56 | -26.75 |
| Ir_27_21 | 2.74 | 0.37 | -13.24 | -22.49 | -21.38 |

| | | | | | |
|----------|--------|--------|--------|--------|--------|
| Ir_27_22 | 2.91 | -2.20 | -8.50 | -24.8 | -28.48 |
| Ir_27_23 | -3.77 | -1.99 | -11.87 | -24.78 | -29.10 |
| Ir_27_24 | -6.87 | -8.24 | -17.24 | -19.52 | -33.31 |
| Ir_27_25 | -12.33 | -3.97 | -19.11 | -26.89 | -25.76 |
| Ir_27_26 | -4.78 | -0.88 | -19.57 | -19.47 | -24.21 |
| Ir_27_27 | -3.35 | -6.48 | -6.24 | -22.62 | -28.96 |
| Ir_27_28 | -1.30 | -7.77 | -12.46 | -18.08 | -24.45 |
| Ir_28_0 | -7.11 | -7.34 | -20.92 | -25.97 | -31.81 |
| Ir_28_1 | -5.05 | -8.22 | -14.73 | -16.35 | -32.81 |
| Ir_28_2 | -3.67 | -11.77 | -14.71 | -30 | -32.85 |
| Ir_28_3 | 8.51 | -2.61 | -9.84 | -17.87 | -27.83 |
| Ir_28_4 | -8.47 | -7.91 | -14.95 | -21.77 | -29.55 |
| Ir_28_5 | -2.00 | -2.15 | -13.47 | -13.87 | -27.26 |
| Ir_28_6 | 9.84 | -3.07 | -16.05 | -17.71 | -29.87 |
| Ir_28_8 | -7.68 | -4.49 | -17.73 | -22.51 | -31.82 |
| Ir_28_9 | -4.82 | -2.64 | -18.02 | -23.34 | -34.19 |
| Ir_28_10 | -9.37 | -12.68 | -26.11 | -27.58 | -34.47 |
| Ir_28_11 | -6.99 | -8.62 | -21.55 | -26.14 | -29.79 |
| Ir_28_12 | -8.38 | -8.29 | -14.11 | -23.85 | -31.88 |
| Ir_28_13 | 8.65 | -5.51 | -4.22 | -15.62 | -23.35 |
| Ir_28_14 | -6.73 | -2.29 | -23.82 | -28.41 | -29.27 |
| Ir_28_16 | -9.44 | -6.67 | -19.01 | -19.67 | -23.85 |
| Ir_28_17 | -7.14 | -3.32 | -11.47 | -17.16 | -28.37 |
| Ir_28_18 | -9.70 | -5.39 | -13.21 | -21.17 | -27.31 |
| Ir_28_19 | -6.24 | 1.38 | -14.85 | -17.92 | -26.38 |
| Ir_28_20 | -6.73 | -5.52 | -14.81 | -18.72 | -25.78 |
| Ir_28_21 | -1.81 | -5.16 | -11.99 | -23.48 | -18.74 |
| Ir_28_22 | 4.11 | -3.93 | -14.96 | -20.24 | -29.70 |
| Ir_28_23 | 1.83 | -6.14 | -12.42 | -16.57 | -29.03 |
| Ir_28_24 | -4.48 | -2.37 | -15.35 | -20.08 | -31.87 |
| Ir_28_25 | -9.10 | -10.68 | -22.45 | -23.99 | -30.37 |
| Ir_28_26 | -8.95 | -7.89 | -17.12 | -20.16 | -23.20 |
| Ir_28_27 | 1.46 | -4.77 | -15.71 | -23.3 | -22.80 |
| Ir_28_28 | 1.20 | -5.22 | -15.01 | -19.18 | -23.93 |

Table S5. Difference between ML (SLATM) predicted and DFT computed relative free energies [$\Delta G(\text{ML}) - \Delta G(\text{DFT})$] of catalytic cycle intermediates for the out-of-sample data set of catalysts. Values in kcal/mol.

| | $\Delta\Delta G(\text{I3})$ | $\Delta\Delta G(\text{I4})$ | $\Delta\Delta G(\text{I5})$ | $\Delta\Delta G(\text{I6})$ | $\Delta\Delta G(\text{I7})$ |
|----------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Co_23_0 | -1.24 | -0.22 | 1.36 | 2.01 | 2.58 |
| Co_23_1 | -0.51 | 0.72 | -1.79 | 1.01 | 2.49 |
| Co_23_2 | -1.77 | -0.42 | -1.09 | -0.81 | 1.81 |
| Co_23_3 | 1.95 | -0.89 | 3.30 | 2.18 | 3.41 |
| Co_23_4 | -1.64 | 4.15 | -2.82 | -1.94 | -2.12 |
| Co_23_5 | -4.50 | 0.32 | -0.68 | 1.29 | 1.43 |
| Co_23_6 | -1.05 | -0.64 | -0.07 | -3.33 | 2.98 |
| Co_23_7 | -0.11 | -12.00 | 4.99 | -9.33 | 5.83 |
| Co_23_8 | -4.06 | 2.92 | 0.28 | 2.71 | 3.44 |
| Co_23_9 | -2.33 | 2.98 | 2.24 | -0.02 | 0.73 |
| Co_23_10 | 2.95 | -1.25 | 4.06 | -0.42 | 5.15 |
| Co_23_11 | -1.71 | 2.33 | 0.41 | 0.82 | -0.76 |
| Co_23_12 | 0.37 | 2.44 | 4.90 | 1.14 | 0.07 |
| Co_23_13 | -3.79 | -3.06 | 1.00 | -0.89 | -0.68 |
| Co_23_14 | -4.06 | 3.47 | 3.83 | -4.09 | 4.30 |
| Co_23_16 | 3.82 | 7.18 | 2.93 | 7.42 | 0.57 |
| Co_23_17 | 2.54 | 2.31 | 2.06 | 7.10 | 1.02 |
| Co_23_18 | -5.40 | -1.12 | -2.71 | -2.49 | -0.69 |
| Co_23_19 | -1.53 | 4.47 | 1.28 | -3.62 | -1.61 |
| Co_23_20 | 1.71 | 0.16 | 2.76 | 10.26 | 3.80 |

| | | | | | |
|----------|--------|--------|-------|-------|-------|
| Co_23_21 | -0.05 | -2.32 | 0.17 | 5.16 | 4.36 |
| Co_23_22 | 3.99 | -2.34 | 1.54 | 5.29 | 2.97 |
| Co_23_23 | 3.31 | -2.36 | 0.35 | -1.56 | -0.12 |
| Co_23_24 | 0.53 | -2.15 | 4.20 | 3.43 | 4.21 |
| Co_23_25 | 0.13 | 0.67 | 4.74 | 3.88 | -5.91 |
| Co_23_26 | 1.58 | 0.32 | 5.34 | 4.48 | -0.24 |
| Co_23_27 | 0.70 | -4.00 | 5.57 | 5.28 | 4.00 |
| Co_23_28 | -1.50 | -5.87 | 2.35 | 2.73 | -1.40 |
| Co_24_0 | -2.01 | 0.33 | 1.75 | 3.55 | 1.97 |
| Co_24_1 | -2.66 | -0.11 | 1.84 | 4.58 | 2.61 |
| Co_24_2 | -1.73 | -0.64 | 2.84 | 4.97 | -0.16 |
| Co_24_3 | -2.70 | -4.91 | 3.02 | -3.40 | 4.29 |
| Co_24_4 | -0.40 | 4.13 | 4.05 | 2.13 | 2.06 |
| Co_24_5 | 4.10 | 4.89 | 2.60 | 5.22 | 0.65 |
| Co_24_6 | -6.17 | -4.77 | 1.37 | 1.33 | 1.39 |
| Co_24_7 | 7.40 | -26.89 | 5.36 | -8.14 | 4.62 |
| Co_24_8 | -0.86 | 3.77 | 2.70 | 0.86 | 1.79 |
| Co_24_9 | 3.89 | 0.99 | 4.01 | 2.09 | -1.88 |
| Co_24_10 | 1.63 | 3.45 | 4.35 | 2.11 | 0.25 |
| Co_24_11 | 2.95 | 3.10 | 5.05 | 2.51 | 3.06 |
| Co_24_12 | -2.35 | -1.39 | 6.33 | 2.60 | 2.85 |
| Co_24_13 | 2.20 | -3.29 | -5.26 | 4.60 | 3.85 |
| Co_24_14 | -7.56 | -3.06 | 6.16 | 5.15 | 3.79 |
| Co_24_16 | 3.43 | 3.97 | -0.71 | -0.74 | -0.61 |
| Co_24_17 | -2.88 | -0.15 | 2.49 | 8.68 | 0.34 |
| Co_24_18 | 1.27 | 1.36 | 0.74 | 3.46 | 0.60 |
| Co_24_19 | -0.32 | -3.50 | 7.56 | 5.02 | 0.68 |
| Co_24_20 | -0.04 | -5.69 | 4.81 | 6.47 | 2.03 |
| Co_24_21 | 3.17 | -6.07 | -0.45 | 3.04 | 2.81 |
| Co_24_22 | 8.18 | -1.42 | 4.07 | 4.85 | 3.74 |
| Co_24_23 | 0.07 | -5.46 | 3.92 | 3.31 | -0.19 |
| Co_24_24 | -1.18 | -0.22 | 6.48 | 5.71 | 5.38 |
| Co_24_25 | -0.16 | -3.39 | -1.56 | 0.90 | 7.67 |
| Co_24_26 | -0.84 | 0.89 | 2.47 | 0.18 | 6.24 |
| Co_24_27 | 3.60 | 2.78 | 6.27 | 9.54 | 2.75 |
| Co_24_28 | 2.16 | -6.05 | -3.34 | 2.71 | 0.64 |
| Co_25_0 | 4.85 | 3.97 | 2.83 | 3.94 | 0.86 |
| Co_25_1 | -2.64 | 0.93 | 0.80 | 2.20 | 1.65 |
| Co_25_2 | 11.68 | 5.30 | 8.48 | 2.34 | 1.25 |
| Co_25_3 | 5.25 | -7.01 | -1.67 | 1.24 | 3.74 |
| Co_25_4 | 1.09 | 6.72 | 4.60 | -1.13 | -2.69 |
| Co_25_5 | 3.71 | 5.88 | 3.33 | 4.17 | -3.21 |
| Co_25_6 | -0.04 | -1.83 | -6.54 | 5.27 | -2.14 |
| Co_25_8 | 5.11 | 9.22 | 3.16 | 7.19 | 2.58 |
| Co_25_9 | -0.50 | 4.27 | 5.87 | -1.46 | 2.86 |
| Co_25_10 | 1.12 | -2.65 | 0.77 | -3.31 | 4.00 |
| Co_25_11 | -1.21 | -1.62 | -4.53 | 3.47 | -0.32 |
| Co_25_12 | 3.05 | 6.69 | 0.73 | 4.98 | 4.68 |
| Co_25_13 | -12.67 | -15.81 | -3.90 | -3.64 | -6.62 |
| Co_25_14 | 0.49 | 5.76 | 1.04 | 1.67 | -1.97 |
| Co_25_16 | -3.94 | 5.57 | 0.94 | 4.87 | -0.67 |
| Co_25_17 | -6.65 | 2.55 | 0.66 | 4.17 | -5.32 |
| Co_25_18 | -4.65 | 0.66 | 2.72 | -0.82 | -7.98 |
| Co_25_19 | 0.60 | 3.74 | 2.86 | 5.17 | 5.61 |
| Co_25_20 | 5.42 | 2.54 | 4.71 | 1.40 | 0.50 |
| Co_25_21 | 8.62 | 2.50 | 4.34 | 4.85 | -8.65 |
| Co_25_22 | 5.15 | -5.10 | 3.82 | 1.54 | 1.16 |
| Co_25_23 | -1.09 | -3.34 | 1.24 | -2.31 | -5.13 |
| Co_25_24 | 0.95 | -3.24 | 3.16 | 8.06 | -0.43 |
| Co_25_25 | -4.99 | 2.55 | 4.62 | -0.45 | 2.74 |

| | | | | | |
|----------|--------|-------|-------|---------|-------|
| Co_25_26 | -1.09 | -1.82 | 5.19 | -1.63 | 0.97 |
| Co_25_27 | -2.40 | 0.76 | 5.29 | -1.75 | -0.07 |
| Co_25_28 | -1.16 | -0.71 | -5.33 | 5.09 | 1.55 |
| Co_26_0 | 0.45 | -0.23 | 0.87 | -0.76 | -0.24 |
| Co_26_1 | 4.71 | 5.37 | 2.99 | -0.96 | 2.89 |
| Co_26_2 | -1.49 | -3.94 | -0.35 | 0.77 | -3.55 |
| Co_26_3 | -1.11 | -5.72 | 0.31 | -2.89 | -4.61 |
| Co_26_4 | -3.00 | 4.41 | -2.59 | -1.84 | -0.74 |
| Co_26_5 | -2.38 | -4.23 | -0.89 | 2.29 | -0.98 |
| Co_26_6 | -3.19 | 3.70 | -3.05 | 3.45 | 0.64 |
| Co_26_7 | 19.36 | -5.67 | 1.85 | -9.14 | 4.08 |
| Co_26_8 | 0.13 | -0.04 | 5.04 | 1.87 | 5.01 |
| Co_26_9 | 2.20 | 5.50 | 1.25 | -1.72 | 2.90 |
| Co_26_10 | -1.22 | 8.58 | 0.49 | 3.07 | -2.30 |
| Co_26_11 | 4.07 | 7.63 | 1.12 | 2.43 | 2.73 |
| Co_26_12 | 3.20 | 4.36 | 6.92 | 2.69 | 6.79 |
| Co_26_13 | 4.11 | -4.52 | 5.43 | -0.47 | 3.74 |
| Co_26_14 | -1.34 | -0.36 | 0.55 | -0.97 | 2.19 |
| Co_26_16 | -2.07 | 13.00 | -0.99 | 1.47 | 1.62 |
| Co_26_17 | 0.38 | 4.98 | 2.39 | -0.38 | -2.66 |
| Co_26_18 | 0.35 | 4.57 | 0.15 | -2.06 | 1.81 |
| Co_26_19 | -1.61 | 0.84 | -1.66 | 2.96 | -5.13 |
| Co_26_20 | -3.32 | 3.16 | 5.41 | 3.89 | -0.88 |
| Co_26_21 | 9.46 | 3.83 | 2.31 | 4.87 | 3.25 |
| Co_26_22 | 6.04 | -4.75 | 3.09 | 4.04 | -4.65 |
| Co_26_23 | 0.02 | 2.29 | 1.59 | 3.78 | -1.44 |
| Co_26_24 | 11.15 | 2.87 | 9.14 | 9.98 | 4.16 |
| Co_26_26 | -0.89 | 3.00 | -6.10 | -104.28 | -2.11 |
| Co_26_27 | 5.70 | 0.01 | 13.24 | -0.34 | 1.71 |
| Co_26_28 | 3.74 | -1.29 | 3.73 | 2.98 | -5.72 |
| Co_27_0 | 3.78 | 3.11 | -0.60 | 4.61 | 0.52 |
| Co_27_1 | 0.75 | 2.20 | 2.28 | 4.17 | 0.26 |
| Co_27_2 | -11.61 | 0.09 | 0.40 | -8.77 | 7.64 |
| Co_27_3 | -1.13 | -8.16 | -1.17 | 2.37 | 1.92 |
| Co_27_4 | -1.23 | 5.20 | 2.97 | 1.01 | 0.10 |
| Co_27_5 | 1.18 | -0.56 | 4.25 | 4.97 | -0.23 |
| Co_27_6 | -4.29 | 1.45 | 7.04 | 4.00 | -2.02 |
| Co_27_8 | 4.98 | 5.60 | 4.25 | 10.44 | 10.15 |
| Co_27_9 | 3.79 | -1.92 | 2.74 | 3.06 | 5.97 |
| Co_27_10 | 1.30 | -0.49 | -1.55 | -2.49 | 7.41 |
| Co_27_11 | 1.20 | 1.90 | 4.27 | 2.87 | 2.48 |
| Co_27_12 | -2.55 | 3.07 | 3.15 | 6.73 | 8.43 |
| Co_27_13 | 1.71 | -0.36 | -6.95 | -6.88 | -0.79 |
| Co_27_14 | 3.60 | -3.68 | 4.95 | 3.62 | 2.83 |
| Co_27_16 | 1.31 | 6.64 | 0.29 | 7.76 | -1.56 |
| Co_27_17 | 4.61 | 2.01 | 2.53 | -2.93 | -0.01 |
| Co_27_18 | -1.27 | -4.37 | 3.75 | 5.54 | 1.84 |
| Co_27_19 | -0.75 | 1.27 | -3.71 | -4.16 | -0.22 |
| Co_27_20 | 2.45 | 2.77 | 8.63 | 2.77 | -2.27 |
| Co_27_21 | -5.96 | -4.64 | -1.47 | -1.77 | -7.40 |
| Co_27_22 | -0.71 | -4.35 | 0.76 | 5.61 | 6.05 |
| Co_27_23 | 3.43 | 0.28 | 1.62 | 5.44 | 2.06 |
| Co_27_24 | 9.28 | 2.66 | 6.79 | -0.24 | 7.96 |
| Co_27_25 | 5.89 | -4.59 | 2.21 | 0.40 | -5.50 |
| Co_27_26 | 1.68 | -0.80 | 7.80 | 1.25 | 0.60 |
| Co_27_27 | 3.65 | -0.51 | 5.64 | 0.81 | 3.20 |
| Co_27_28 | 0.62 | -0.01 | 1.06 | -1.23 | -0.97 |
| Co_28_0 | 2.40 | 1.60 | 3.04 | 5.10 | -0.43 |
| Co_28_1 | 3.67 | 2.83 | 0.40 | -3.58 | 5.36 |
| Co_28_2 | 2.80 | 3.75 | 2.59 | 8.12 | 5.79 |

| | | | | | |
|----------|--------|--------|-------|-------|-------|
| Co_28_3 | -7.34 | -5.08 | 0.00 | -1.33 | 2.63 |
| Co_28_4 | 10.82 | 12.43 | 9.44 | 6.54 | 10.28 |
| Co_28_5 | 0.78 | -4.16 | -1.16 | -4.11 | -0.36 |
| Co_28_6 | -7.36 | 0.97 | 0.15 | -1.72 | 0.57 |
| Co_28_8 | 1.74 | -2.81 | 0.52 | -0.65 | 4.06 |
| Co_28_9 | 4.76 | -1.81 | 5.77 | 5.79 | 9.18 |
| Co_28_10 | 0.24 | 2.28 | 4.66 | 5.03 | 0.23 |
| Co_28_11 | 0.09 | 0.44 | 2.70 | 4.75 | 0.10 |
| Co_28_12 | 2.93 | 4.55 | -2.74 | 3.69 | 9.82 |
| Co_28_13 | -10.53 | -2.25 | -8.12 | -4.03 | -4.19 |
| Co_28_14 | 1.33 | 1.52 | 6.09 | 5.29 | 3.13 |
| Co_28_16 | 4.19 | 8.48 | 2.46 | -0.42 | -1.55 |
| Co_28_17 | -0.55 | -6.35 | -5.90 | -6.64 | 0.15 |
| Co_28_18 | 0.87 | -2.41 | -3.89 | -2.14 | -4.56 |
| Co_28_19 | -0.35 | 0.65 | -0.54 | -3.16 | -0.04 |
| Co_28_20 | 0.85 | -0.34 | 0.66 | 1.18 | -1.15 |
| Co_28_21 | 1.91 | 0.42 | 0.20 | 0.19 | -0.51 |
| Co_28_22 | -2.92 | -5.81 | 4.52 | -0.46 | 6.31 |
| Co_28_23 | -2.24 | 0.58 | 4.47 | -0.59 | 1.21 |
| Co_28_24 | 7.34 | -3.84 | 8.48 | 5.48 | 6.91 |
| Co_28_25 | 6.76 | 1.93 | 6.70 | 1.87 | 2.84 |
| Co_28_26 | 3.35 | 5.67 | 2.58 | 0.84 | -3.46 |
| Co_28_27 | -1.84 | -2.09 | 4.07 | 3.21 | -2.63 |
| Co_28_28 | -4.46 | -4.06 | 3.37 | 2.81 | -1.54 |
| Rh_23_0 | -2.70 | -0.96 | -0.94 | -1.58 | 1.26 |
| Rh_23_1 | -1.67 | 0.17 | -2.74 | 0.88 | 2.40 |
| Rh_23_2 | -0.48 | -3.35 | 1.04 | 1.51 | 3.97 |
| Rh_23_3 | 1.75 | -0.28 | 2.22 | -0.18 | 2.76 |
| Rh_23_4 | -1.62 | 0.37 | -3.39 | -2.57 | -2.45 |
| Rh_23_5 | -5.47 | -2.33 | -0.26 | -2.16 | 1.34 |
| Rh_23_6 | 0.10 | -2.97 | 0.29 | 0.11 | 2.37 |
| Rh_23_7 | 2.00 | -11.05 | 6.49 | -9.82 | 7.13 |
| Rh_23_8 | -5.21 | -0.52 | -0.28 | 0.58 | 2.06 |
| Rh_23_9 | -2.05 | 1.81 | 2.15 | 2.14 | 1.60 |
| Rh_23_10 | 1.33 | -3.83 | 2.65 | -1.92 | 2.44 |
| Rh_23_11 | -0.69 | 1.32 | 2.30 | 3.34 | 1.14 |
| Rh_23_12 | -2.75 | -1.73 | 3.84 | -7.46 | -0.81 |
| Rh_23_13 | -1.94 | -0.81 | 2.41 | 1.97 | -0.24 |
| Rh_23_14 | -4.52 | 1.43 | 3.21 | -3.46 | 2.58 |
| Rh_23_16 | 3.08 | -1.78 | 2.72 | 3.50 | -1.32 |
| Rh_23_17 | 1.37 | 0.49 | 1.10 | 3.68 | -1.98 |
| Rh_23_18 | -4.49 | -1.30 | -2.33 | -1.00 | -2.01 |
| Rh_23_19 | -1.60 | -2.20 | 1.56 | -1.62 | -1.03 |
| Rh_23_20 | 0.22 | 1.20 | 2.19 | 6.22 | 3.84 |
| Rh_23_21 | -2.90 | -6.17 | -1.28 | 3.25 | 0.22 |
| Rh_23_22 | 2.87 | -2.81 | 0.27 | 2.89 | 2.37 |
| Rh_23_23 | 1.41 | -2.32 | -0.01 | -0.11 | -0.30 |
| Rh_23_24 | -1.31 | -6.97 | 3.28 | 3.98 | 4.32 |
| Rh_23_25 | -1.59 | 0.51 | 3.62 | 2.09 | -7.50 |
| Rh_23_26 | -0.21 | -0.62 | 5.00 | 1.30 | 0.36 |
| Rh_23_27 | -2.81 | -6.89 | 2.72 | 4.59 | 1.77 |
| Rh_23_28 | -2.73 | -3.54 | 2.33 | 4.70 | -2.47 |
| Rh_24_0 | -2.12 | -0.20 | -0.28 | -0.61 | 1.45 |
| Rh_24_1 | -1.71 | -0.20 | 1.34 | 3.50 | 2.57 |
| Rh_24_2 | -0.84 | -5.39 | 2.77 | -3.06 | 1.95 |
| Rh_24_3 | -0.78 | -3.98 | 2.69 | -4.16 | 4.67 |
| Rh_24_4 | -1.03 | -0.10 | 2.89 | 0.81 | 1.39 |
| Rh_24_5 | 0.82 | -3.13 | 2.01 | 1.74 | 0.04 |
| Rh_24_6 | -8.89 | -7.37 | 1.19 | 3.21 | 0.65 |
| Rh_24_7 | 9.76 | -26.69 | 6.00 | -8.87 | 6.95 |

| | | | | | |
|----------|-------|--------|-------|-------|--------|
| Rh_24_8 | 0.30 | 0.83 | 2.69 | 2.76 | 2.79 |
| Rh_24_9 | 15.48 | -0.12 | 5.32 | 5.08 | 1.27 |
| Rh_24_10 | -1.39 | 0.81 | 3.87 | 0.00 | -0.21 |
| Rh_24_11 | 2.24 | -0.94 | 3.98 | 2.23 | 2.14 |
| Rh_24_12 | -2.61 | -0.34 | 6.61 | 1.44 | 3.42 |
| Rh_24_13 | 4.08 | -0.66 | -5.11 | 5.22 | 4.82 |
| Rh_24_14 | -6.68 | -5.51 | 5.55 | 3.68 | 4.35 |
| Rh_24_16 | 2.37 | 0.49 | -0.26 | 4.24 | 0.05 |
| Rh_24_17 | -1.84 | 0.35 | 2.18 | 6.69 | 0.78 |
| Rh_24_18 | 0.19 | 1.44 | -1.58 | 5.34 | -0.27 |
| Rh_24_19 | 1.03 | -4.14 | 6.47 | 0.92 | 1.75 |
| Rh_24_20 | -0.89 | -8.81 | 3.68 | 1.84 | 2.18 |
| Rh_24_21 | -0.11 | -9.80 | -1.51 | 1.10 | 0.76 |
| Rh_24_22 | 3.76 | -3.92 | 0.68 | 2.82 | 0.68 |
| Rh_24_23 | 0.26 | -7.04 | 2.45 | 3.37 | -0.40 |
| Rh_24_24 | -0.40 | -4.66 | 5.41 | 6.87 | 5.71 |
| Rh_24_25 | 1.86 | -1.42 | -1.01 | 2.82 | 7.75 |
| Rh_24_26 | -2.29 | -6.59 | 2.27 | -1.97 | 3.66 |
| Rh_24_27 | 4.19 | 3.93 | 6.73 | 10.55 | 3.29 |
| Rh_24_28 | 1.55 | -7.19 | -2.27 | 2.84 | -0.66 |
| Rh_25_0 | 1.49 | 3.85 | 1.70 | 3.15 | -0.46 |
| Rh_25_1 | -1.12 | 1.60 | 1.24 | 2.46 | 1.18 |
| Rh_25_2 | 11.40 | 5.87 | 8.65 | 4.29 | 3.13 |
| Rh_25_3 | 4.89 | -5.88 | -1.14 | 0.46 | 3.39 |
| Rh_25_4 | 1.31 | 5.87 | 3.49 | -5.43 | -5.52 |
| Rh_25_5 | 0.77 | 2.62 | -1.29 | 5.83 | -3.74 |
| Rh_25_6 | -3.08 | -1.07 | -5.49 | 10.37 | 0.20 |
| Rh_25_8 | 4.62 | 4.83 | 2.10 | 3.09 | 1.98 |
| Rh_25_9 | 0.54 | -0.17 | 5.97 | -2.81 | 3.26 |
| Rh_25_10 | 0.46 | -2.78 | 0.51 | -1.52 | 3.99 |
| Rh_25_11 | -0.54 | -8.00 | -3.71 | 0.50 | 0.36 |
| Rh_25_12 | 2.58 | 2.92 | 1.07 | 5.79 | 0.74 |
| Rh_25_13 | -9.33 | -15.16 | -2.80 | -3.00 | -11.40 |
| Rh_25_14 | -0.07 | -3.62 | 0.81 | -0.81 | -2.09 |
| Rh_25_16 | -2.88 | 2.78 | 1.34 | 6.34 | -0.71 |
| Rh_25_17 | -3.69 | -4.31 | 1.95 | 1.08 | -4.61 |
| Rh_25_18 | -3.63 | 0.58 | 1.29 | 0.31 | -6.25 |
| Rh_25_19 | -0.97 | -0.62 | -1.94 | 6.05 | 3.65 |
| Rh_25_20 | 3.43 | -0.70 | 3.17 | 5.39 | -1.06 |
| Rh_25_21 | 7.99 | 2.87 | 4.59 | 5.43 | -6.59 |
| Rh_25_22 | 6.00 | -7.05 | 7.48 | -5.72 | 1.57 |
| Rh_25_23 | -1.64 | -2.49 | 0.84 | 0.06 | -4.92 |
| Rh_25_24 | 2.31 | -4.65 | 1.91 | 3.74 | -0.95 |
| Rh_25_25 | -3.08 | 3.32 | -6.66 | -4.42 | 2.51 |
| Rh_25_26 | -2.56 | -5.34 | 3.44 | -1.10 | 0.93 |
| Rh_25_27 | -1.03 | 0.23 | 4.18 | -0.36 | 0.04 |
| Rh_25_28 | -2.46 | -0.82 | -6.24 | 4.96 | 1.13 |
| Rh_26_0 | -1.26 | -1.37 | -0.44 | -4.86 | -1.52 |
| Rh_26_1 | 2.91 | 2.21 | 1.49 | 0.50 | 1.69 |
| Rh_26_2 | -2.06 | -4.41 | -1.95 | 1.88 | -3.09 |
| Rh_26_3 | 1.83 | -3.69 | 3.44 | 1.59 | -1.63 |
| Rh_26_4 | -0.98 | 1.25 | 0.04 | -1.19 | 0.92 |
| Rh_26_5 | -2.19 | -5.45 | -1.41 | 2.20 | -1.90 |
| Rh_26_6 | -1.91 | 3.43 | -4.63 | 5.04 | 0.34 |
| Rh_26_7 | 20.62 | -1.91 | 4.22 | -7.30 | 6.09 |
| Rh_26_8 | -0.44 | 0.04 | 5.74 | 5.83 | 4.94 |
| Rh_26_9 | 3.37 | 2.30 | 2.14 | -1.38 | 4.18 |
| Rh_26_10 | -2.45 | 1.48 | -0.44 | -0.52 | -3.24 |
| Rh_26_11 | 5.63 | 2.46 | 2.96 | 4.52 | 4.67 |
| Rh_26_12 | 5.63 | 4.71 | 8.89 | 3.46 | 7.30 |

| | | | | | |
|----------|--------|-------|-------|-------|-------|
| Rh_26_13 | 1.43 | -7.53 | 3.87 | -3.15 | 1.42 |
| Rh_26_14 | -0.57 | -2.17 | 1.29 | 2.11 | 0.58 |
| Rh_26_16 | -1.56 | 6.04 | 0.22 | -0.38 | 1.65 |
| Rh_26_17 | 0.84 | -3.18 | 3.04 | -2.88 | -1.79 |
| Rh_26_18 | 0.43 | 3.31 | 1.06 | 0.00 | 1.73 |
| Rh_26_19 | -1.17 | 2.28 | -0.66 | 0.67 | -3.02 |
| Rh_26_20 | -3.16 | -8.21 | 2.56 | 0.09 | -2.20 |
| Rh_26_21 | 7.07 | 3.51 | -0.24 | 4.34 | 0.39 |
| Rh_26_22 | 3.86 | -8.36 | 1.07 | 3.54 | -6.96 |
| Rh_26_23 | -3.23 | -1.57 | -1.80 | 2.90 | -5.56 |
| Rh_26_24 | 7.80 | 0.62 | 6.88 | 4.18 | 2.07 |
| Rh_26_26 | 0.77 | 4.07 | -5.15 | 1.83 | 1.57 |
| Rh_26_27 | 6.66 | 3.08 | 15.36 | 1.68 | 2.06 |
| Rh_26_28 | 2.66 | -4.45 | 2.17 | 3.69 | -4.89 |
| Rh_27_0 | 0.51 | 1.15 | -2.41 | 0.75 | -0.37 |
| Rh_27_1 | -0.48 | 3.49 | 1.80 | 0.42 | 0.25 |
| Rh_27_2 | -9.98 | 0.15 | 0.73 | -9.03 | 6.54 |
| Rh_27_3 | 3.32 | -6.16 | 1.95 | 3.19 | 5.54 |
| Rh_27_4 | -3.98 | -0.50 | -1.92 | -1.46 | -2.60 |
| Rh_27_5 | 0.97 | -1.07 | 4.30 | 2.32 | -0.51 |
| Rh_27_6 | -3.82 | 0.06 | 5.84 | 3.46 | -2.09 |
| Rh_27_8 | 2.37 | 4.16 | 0.07 | 4.23 | 7.33 |
| Rh_27_9 | 3.42 | -1.65 | 3.35 | -1.34 | 6.93 |
| Rh_27_10 | 2.69 | 1.69 | 0.18 | -2.67 | 7.98 |
| Rh_27_11 | -0.63 | -0.26 | 3.78 | -3.31 | -1.84 |
| Rh_27_12 | -3.16 | 2.14 | 1.35 | 6.99 | 7.49 |
| Rh_27_13 | 3.71 | 0.53 | -5.71 | -5.87 | -0.85 |
| Rh_27_14 | 2.35 | -3.98 | 4.17 | 3.12 | 2.92 |
| Rh_27_16 | -1.07 | 2.74 | -2.32 | 3.73 | -2.66 |
| Rh_27_17 | 7.14 | 3.37 | 5.84 | 2.76 | 2.20 |
| Rh_27_18 | 0.07 | -3.52 | 5.23 | 7.68 | 3.27 |
| Rh_27_19 | -3.87 | -4.06 | -5.37 | -5.43 | -3.69 |
| Rh_27_20 | 4.42 | 3.52 | 9.94 | 5.30 | -0.52 |
| Rh_27_21 | -4.09 | -5.67 | 0.58 | 0.01 | -4.53 |
| Rh_27_22 | 0.50 | -3.62 | 1.21 | 7.20 | 5.96 |
| Rh_27_23 | 1.20 | -5.03 | -1.77 | 4.12 | 0.11 |
| Rh_27_24 | 6.91 | -0.15 | 4.74 | 0.76 | 6.67 |
| Rh_27_25 | 8.15 | -2.08 | 3.94 | 5.35 | -1.35 |
| Rh_27_26 | -1.58 | -5.00 | 3.47 | -0.20 | -2.79 |
| Rh_27_27 | 1.70 | -0.69 | -3.86 | 3.05 | 2.21 |
| Rh_27_28 | -1.70 | 0.19 | 1.03 | -1.76 | -2.13 |
| Rh_28_0 | -0.16 | 0.54 | 0.92 | 2.98 | -0.68 |
| Rh_28_1 | 1.84 | 1.51 | -0.27 | -4.89 | 2.72 |
| Rh_28_2 | 1.67 | 3.02 | 1.40 | 8.42 | 4.57 |
| Rh_28_3 | -8.04 | -4.89 | 0.08 | -0.71 | 2.38 |
| Rh_28_4 | -0.46 | 0.92 | -5.29 | 0.24 | -1.18 |
| Rh_28_5 | -1.88 | -4.98 | -0.65 | -5.72 | -0.26 |
| Rh_28_6 | -13.21 | -2.92 | 0.84 | 1.74 | 1.04 |
| Rh_28_8 | 1.81 | -1.39 | 0.27 | 1.56 | 4.02 |
| Rh_28_9 | 0.33 | -4.41 | 2.67 | 2.40 | 6.05 |
| Rh_28_10 | 2.42 | 6.00 | 7.49 | 6.32 | 2.71 |
| Rh_28_11 | -0.29 | 1.27 | 2.58 | 4.76 | 0.93 |
| Rh_28_12 | 2.64 | 1.25 | -2.67 | 3.52 | 4.54 |
| Rh_28_13 | -8.64 | -0.95 | -6.06 | -2.55 | -0.03 |
| Rh_28_14 | 1.35 | -4.70 | 7.28 | 7.49 | 3.09 |
| Rh_28_16 | 0.99 | 0.09 | 0.65 | -0.63 | -4.33 |
| Rh_28_17 | 0.10 | -4.83 | -4.59 | -2.78 | 0.64 |
| Rh_28_18 | 1.98 | -2.55 | -4.18 | 0.85 | -4.25 |
| Rh_28_19 | 0.48 | -6.58 | -0.54 | 1.20 | 0.27 |
| Rh_28_20 | 0.87 | -2.03 | 0.21 | -0.12 | -0.84 |

| | | | | | |
|----------|-------|--------|--------|-------|-------|
| Rh_28_21 | 0.15 | -1.72 | -0.79 | -0.95 | -8.74 |
| Rh_28_22 | -2.56 | -4.67 | 6.18 | 0.34 | 5.07 |
| Rh_28_23 | -3.99 | -0.63 | -1.78 | -3.62 | 0.08 |
| Rh_28_24 | 3.54 | -6.60 | 3.95 | 2.42 | 4.71 |
| Rh_28_25 | 6.48 | 3.72 | 7.36 | 3.68 | 3.68 |
| Rh_28_26 | 1.95 | 0.18 | 0.47 | 0.38 | -5.32 |
| Rh_28_27 | -3.14 | -2.49 | 3.38 | 3.51 | -3.69 |
| Rh_28_28 | -4.00 | -4.61 | 2.93 | -0.53 | -2.84 |
| Ir_23_0 | -2.87 | 1.13 | -0.67 | -1.85 | 1.33 |
| Ir_23_1 | -1.43 | 2.54 | -2.90 | 1.54 | 2.73 |
| Ir_23_2 | -0.33 | -0.97 | 1.14 | 1.81 | 4.83 |
| Ir_23_3 | 2.07 | 2.47 | 3.21 | 0.30 | 3.61 |
| Ir_23_4 | -1.76 | 2.69 | -4.02 | -2.10 | -3.00 |
| Ir_23_5 | -4.70 | 0.75 | 0.53 | -2.06 | 1.09 |
| Ir_23_6 | -0.28 | -0.83 | 0.25 | 0.42 | 1.80 |
| Ir_23_7 | 1.92 | -7.28 | 7.22 | -9.89 | 7.53 |
| Ir_23_8 | -5.47 | 1.36 | -0.12 | 0.40 | 2.35 |
| Ir_23_9 | -2.40 | 4.29 | 2.50 | 1.83 | 1.80 |
| Ir_23_10 | 1.63 | -2.54 | 2.59 | -1.78 | 2.45 |
| Ir_23_11 | -0.81 | 3.85 | 2.70 | 2.39 | 1.40 |
| Ir_23_12 | -2.97 | -0.22 | 4.36 | -9.55 | -0.90 |
| Ir_23_13 | -3.05 | 1.51 | 1.71 | 1.59 | -0.39 |
| Ir_23_14 | -4.79 | 3.90 | -15.36 | -4.77 | 2.52 |
| Ir_23_16 | 3.71 | 1.54 | 2.46 | 3.12 | -1.14 |
| Ir_23_17 | 0.14 | 0.96 | -1.92 | 1.20 | -3.81 |
| Ir_23_18 | -4.38 | 1.20 | -2.04 | -1.17 | -2.00 |
| Ir_23_19 | -1.33 | 0.37 | 0.78 | -1.87 | -0.80 |
| Ir_23_20 | -0.99 | 2.84 | 0.55 | 4.83 | 2.62 |
| Ir_23_21 | -2.97 | -4.57 | -1.54 | 2.98 | 0.24 |
| Ir_23_22 | 3.19 | -0.57 | 0.03 | 2.94 | 2.08 |
| Ir_23_23 | 1.00 | 0.16 | 0.06 | -0.23 | -0.05 |
| Ir_23_24 | -1.60 | -4.48 | 3.22 | 3.38 | 4.28 |
| Ir_23_25 | -1.91 | 1.06 | 3.63 | 1.34 | -5.08 |
| Ir_23_26 | 1.70 | 2.26 | 4.57 | 0.38 | 0.07 |
| Ir_23_27 | -3.37 | -6.04 | 2.51 | 3.96 | 1.50 |
| Ir_23_28 | -2.74 | -0.92 | 2.45 | 4.53 | -2.75 |
| Ir_24_0 | -2.61 | 1.99 | -0.08 | -0.27 | 1.45 |
| Ir_24_1 | -1.95 | 1.90 | 1.59 | 3.69 | 3.17 |
| Ir_24_2 | -1.16 | -2.70 | 2.98 | -5.66 | 1.32 |
| Ir_24_3 | -0.99 | -1.58 | 2.87 | -5.31 | 4.31 |
| Ir_24_4 | -0.97 | 2.39 | 2.73 | 1.39 | 1.32 |
| Ir_24_5 | 0.52 | -0.69 | 2.64 | 2.24 | 0.12 |
| Ir_24_6 | -8.24 | -4.80 | 2.06 | 4.87 | 0.16 |
| Ir_24_7 | 9.53 | -24.91 | 7.15 | -8.95 | 8.08 |
| Ir_24_8 | 0.49 | 2.05 | 2.84 | 2.58 | 3.04 |
| Ir_24_9 | 6.81 | 2.66 | 5.42 | 4.74 | 0.60 |
| Ir_24_10 | -0.82 | 3.97 | 4.63 | -0.31 | 0.10 |
| Ir_24_11 | 2.58 | 1.02 | 4.28 | 1.78 | 1.93 |
| Ir_24_12 | -2.81 | 1.92 | 7.02 | 2.44 | 2.88 |
| Ir_24_13 | 3.67 | 2.08 | -5.87 | 5.19 | 4.43 |
| Ir_24_14 | -6.64 | -2.60 | 5.69 | 3.74 | 3.62 |
| Ir_24_16 | 3.04 | 3.15 | -0.33 | 4.14 | 0.67 |
| Ir_24_17 | -3.37 | 2.18 | 1.37 | 5.56 | -0.03 |
| Ir_24_18 | -0.86 | 2.97 | -2.22 | 4.29 | -1.58 |
| Ir_24_19 | 0.44 | -2.63 | 6.06 | 0.95 | 1.35 |
| Ir_24_20 | -0.68 | -7.44 | 4.01 | 1.51 | 1.31 |
| Ir_24_21 | -0.38 | -4.96 | -1.05 | 1.86 | 1.02 |
| Ir_24_22 | 4.36 | -1.46 | 0.95 | 2.66 | 1.01 |
| Ir_24_23 | -0.49 | -4.93 | 2.14 | 2.80 | -0.73 |
| Ir_24_24 | -0.11 | -2.76 | 5.75 | 6.59 | 5.91 |

| | | | | | |
|----------|--------|--------|-------|-------|--------|
| Ir_24_25 | 2.44 | 1.36 | -0.91 | 3.71 | 7.49 |
| Ir_24_26 | -1.14 | -2.74 | 3.09 | -0.72 | 4.35 |
| Ir_24_27 | 3.59 | 5.66 | 6.24 | 10.62 | 2.52 |
| Ir_24_28 | 1.35 | -5.14 | -2.34 | 1.88 | -0.46 |
| Ir_25_0 | 1.48 | 6.47 | 1.67 | 2.32 | -0.53 |
| Ir_25_1 | -0.69 | 3.62 | 2.16 | 2.45 | 2.06 |
| Ir_25_2 | 12.31 | 8.61 | 9.29 | 3.45 | 3.97 |
| Ir_25_3 | 5.04 | -2.85 | -0.95 | -0.31 | 3.30 |
| Ir_25_4 | 1.15 | 7.81 | 3.47 | -5.37 | -5.90 |
| Ir_25_5 | -2.87 | 2.55 | -4.09 | 2.75 | -6.39 |
| Ir_25_6 | -3.12 | 2.76 | -6.55 | 8.77 | -0.20 |
| Ir_25_8 | 4.38 | 6.43 | -0.02 | 2.21 | 2.11 |
| Ir_25_9 | 0.82 | 1.90 | 5.81 | -3.40 | 3.38 |
| Ir_25_10 | 0.48 | 0.06 | 0.21 | -1.23 | 3.95 |
| Ir_25_11 | -0.61 | -3.43 | -3.39 | 1.34 | 0.18 |
| Ir_25_12 | 2.70 | 6.21 | 0.76 | 5.94 | 0.79 |
| Ir_25_13 | -10.36 | -13.83 | -2.34 | -4.23 | -11.08 |
| Ir_25_14 | -0.34 | -2.20 | -0.14 | -1.22 | -2.08 |
| Ir_25_16 | -2.74 | 5.35 | 1.57 | 5.88 | -0.79 |
| Ir_25_17 | -2.54 | -0.85 | 2.39 | 0.13 | -4.10 |
| Ir_25_18 | -3.10 | 2.78 | 0.72 | -1.13 | -5.70 |
| Ir_25_19 | -0.21 | 3.13 | -2.16 | 6.78 | 4.88 |
| Ir_25_20 | 3.11 | 1.34 | 2.80 | 4.86 | -1.75 |
| Ir_25_21 | 8.39 | 5.33 | 5.09 | 5.27 | -6.67 |
| Ir_25_22 | 5.91 | -3.35 | 7.98 | -5.44 | 1.57 |
| Ir_25_23 | -0.51 | 0.07 | 1.18 | -0.44 | -3.34 |
| Ir_25_24 | 3.24 | -1.69 | 3.64 | 5.81 | 0.29 |
| Ir_25_25 | -3.47 | 5.51 | -8.18 | -6.39 | 2.61 |
| Ir_25_26 | -4.11 | -1.63 | 2.71 | -1.94 | 1.37 |
| Ir_25_27 | -1.34 | 0.45 | 3.05 | -0.56 | -0.05 |
| Ir_25_28 | -2.41 | 1.66 | -7.13 | 4.98 | 1.53 |
| Ir_26_0 | -2.41 | -0.69 | -1.85 | -6.06 | -3.15 |
| Ir_26_1 | 2.89 | 4.59 | 1.47 | 0.66 | 1.98 |
| Ir_26_2 | -2.01 | -2.61 | -2.43 | 1.41 | -3.56 |
| Ir_26_3 | 1.88 | 0.02 | 3.66 | 2.89 | -1.19 |
| Ir_26_4 | -1.50 | 3.92 | -0.25 | -1.02 | 0.86 |
| Ir_26_5 | -1.24 | -2.74 | -1.07 | 2.77 | -1.69 |
| Ir_26_6 | -0.85 | 5.92 | -5.72 | 4.53 | 0.92 |
| Ir_26_7 | 20.69 | 1.08 | 3.81 | -9.58 | 6.08 |
| Ir_26_8 | -1.10 | 2.01 | 4.70 | 5.74 | 3.99 |
| Ir_26_9 | 3.61 | 5.41 | 1.74 | 2.46 | 3.91 |
| Ir_26_10 | -1.85 | 1.61 | -0.46 | -1.08 | -2.99 |
| Ir_26_11 | 5.31 | 5.18 | 3.31 | 5.24 | 4.83 |
| Ir_26_12 | 4.16 | 7.01 | 6.76 | 2.25 | 6.87 |
| Ir_26_13 | 1.21 | -4.95 | 4.80 | -3.81 | 1.37 |
| Ir_26_14 | 0.84 | 0.92 | 1.44 | 2.54 | 1.29 |
| Ir_26_16 | -1.21 | 8.75 | 0.86 | 0.66 | 2.20 |
| Ir_26_17 | 1.96 | 0.22 | 4.23 | -2.54 | -1.47 |
| Ir_26_18 | 0.56 | 6.13 | 1.62 | 0.49 | 2.31 |
| Ir_26_19 | -2.01 | 4.65 | -0.41 | 0.50 | -2.59 |
| Ir_26_20 | -2.43 | -5.23 | 3.19 | 0.71 | -0.64 |
| Ir_26_21 | 6.67 | 4.30 | -0.14 | 3.62 | 0.22 |
| Ir_26_22 | 3.68 | -6.41 | 1.20 | 3.22 | -7.81 |
| Ir_26_23 | -2.61 | 0.01 | -1.46 | 1.92 | -5.13 |
| Ir_26_24 | 8.06 | 3.08 | 7.53 | 5.34 | 2.42 |
| Ir_26_26 | -0.22 | 6.18 | -6.22 | 2.35 | 1.26 |
| Ir_26_27 | 6.97 | 6.33 | 15.72 | 1.62 | 3.07 |
| Ir_26_28 | 3.22 | -1.49 | 2.79 | 3.90 | -4.24 |
| Ir_27_0 | 0.75 | 3.00 | -2.57 | 0.63 | -0.34 |
| Ir_27_1 | -0.77 | 5.20 | 1.40 | 0.08 | -0.89 |

| | | | | | |
|----------|--------|-------|-------|-------|-------|
| Ir_27_2 | -9.37 | 2.11 | 0.79 | -9.17 | 6.70 |
| Ir_27_3 | 3.10 | -3.23 | 2.18 | 3.30 | 5.54 |
| Ir_27_4 | -2.74 | 2.39 | -2.06 | 0.25 | -3.02 |
| Ir_27_5 | -0.07 | 1.47 | 4.02 | 2.14 | -0.70 |
| Ir_27_6 | -4.33 | 1.82 | 4.79 | 2.76 | -3.37 |
| Ir_27_9 | 4.03 | 2.28 | 3.26 | -0.98 | 7.27 |
| Ir_27_10 | 2.35 | 3.71 | -0.22 | -2.01 | 7.35 |
| Ir_27_11 | -0.74 | 1.81 | 3.95 | -4.09 | -2.91 |
| Ir_27_12 | -2.14 | 4.45 | 1.64 | 8.19 | 7.88 |
| Ir_27_13 | 3.25 | 3.12 | -7.71 | -7.02 | -1.28 |
| Ir_27_14 | 2.79 | -1.27 | 4.04 | 3.96 | 3.37 |
| Ir_27_16 | -2.21 | 3.66 | -3.15 | 3.10 | -2.38 |
| Ir_27_17 | 6.43 | 5.36 | 4.67 | 1.75 | 0.85 |
| Ir_27_18 | -1.21 | -1.96 | 4.24 | 6.22 | 2.28 |
| Ir_27_19 | -3.21 | -1.48 | -5.45 | -5.49 | -4.23 |
| Ir_27_20 | 3.99 | 6.08 | 9.23 | 4.97 | -0.52 |
| Ir_27_21 | -5.21 | -4.58 | -1.16 | 1.75 | -6.47 |
| Ir_27_22 | -0.92 | -2.21 | 0.58 | 6.51 | 5.07 |
| Ir_27_23 | 1.76 | -2.75 | -1.75 | 4.07 | 0.62 |
| Ir_27_24 | 7.15 | 2.14 | 5.19 | 1.15 | 6.45 |
| Ir_27_25 | 10.49 | 0.14 | 4.76 | 6.34 | -0.03 |
| Ir_27_26 | -1.84 | -3.28 | 4.01 | 0.00 | -3.12 |
| Ir_27_27 | 1.94 | 1.91 | -6.11 | 3.07 | 2.77 |
| Ir_27_28 | -0.67 | 2.39 | 0.50 | -1.69 | -2.48 |
| Ir_28_0 | -0.38 | 2.07 | 0.79 | 2.77 | -0.82 |
| Ir_28_1 | 1.85 | 3.66 | -0.30 | -4.84 | 3.01 |
| Ir_28_2 | 1.77 | 6.26 | 1.30 | 8.30 | 4.68 |
| Ir_28_3 | -8.17 | -1.94 | 0.65 | -0.85 | 2.25 |
| Ir_28_4 | 0.28 | 3.53 | -4.28 | 0.52 | -1.30 |
| Ir_28_5 | -1.92 | -2.45 | -0.34 | -4.73 | -0.43 |
| Ir_28_6 | -12.99 | -1.52 | 0.43 | 0.46 | 0.99 |
| Ir_28_8 | 2.31 | 0.45 | 0.64 | 2.23 | 4.14 |
| Ir_28_9 | -0.68 | -2.34 | 2.11 | 1.38 | 5.92 |
| Ir_28_10 | 2.74 | 7.56 | 8.22 | 6.82 | 5.05 |
| Ir_28_11 | -0.11 | 3.59 | 2.79 | 5.09 | 1.53 |
| Ir_28_12 | 2.63 | 3.72 | -3.00 | 3.08 | 3.97 |
| Ir_28_13 | -9.29 | 1.54 | -6.82 | -2.79 | 0.63 |
| Ir_28_14 | 2.22 | -2.08 | 7.74 | 8.90 | 2.89 |
| Ir_28_16 | 1.13 | 2.84 | 1.69 | -1.03 | -5.23 |
| Ir_28_17 | 0.47 | -0.79 | -4.75 | -2.57 | 1.48 |
| Ir_28_18 | 1.39 | 0.76 | -4.51 | 0.73 | -1.77 |
| Ir_28_19 | -1.05 | -5.63 | -2.04 | -1.27 | -1.48 |
| Ir_28_20 | 1.11 | 0.98 | -0.34 | -0.52 | -1.05 |
| Ir_28_21 | -0.72 | 0.29 | -1.04 | 2.09 | -9.41 |
| Ir_28_22 | -3.14 | -1.23 | 7.08 | 0.48 | 5.39 |
| Ir_28_23 | -4.60 | 1.19 | -2.03 | -3.98 | -0.03 |
| Ir_28_24 | 5.05 | -3.81 | 4.42 | 2.46 | 5.69 |
| Ir_28_25 | 6.46 | 7.34 | 7.53 | 3.36 | 3.70 |
| Ir_28_26 | 2.88 | 3.72 | 1.49 | 1.19 | -4.07 |
| Ir_28_27 | -3.19 | -0.35 | 3.49 | 2.74 | -4.17 |
| Ir_28_28 | -3.66 | -0.30 | 2.88 | -0.74 | -3.45 |

Table S6. ML (SLATM) predicted Relative free energies of reaction steps for the out-of-sample data set of catalysts. Values in kcal/mol.

| | I2-->I3 | I3-->I4 | I4-->I5 | I5-->I6 | I6-->I7 | I7-->I2 | -ΔG(pds) | pds |
|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| Co_23_0 | -9.03 | 4.50 | -23.11 | 1.71 | 0.24 | -5.06 | -4.50 | I3-->I4 |
| Co_23_1 | -5.19 | 1.16 | -19.39 | -0.43 | 0.45 | -7.33 | -1.16 | I3-->I4 |

| | | | | | | | | |
|----------|--------|--------|--------|-------|-------|--------|--------|--------|
| Co_23_2 | -2.76 | -2.21 | -15.02 | -3.14 | 2.42 | -10.03 | -2.42 | I6->I7 |
| Co_23_3 | -0.34 | -4.21 | -12.30 | -2.87 | 1.34 | -12.35 | -1.34 | I6->I7 |
| Co_23_4 | -10.58 | 6.75 | -22.31 | 0.97 | -0.05 | -5.53 | -6.75 | I3->I4 |
| Co_23_5 | -7.19 | 3.67 | -19.39 | -0.68 | 0.07 | -7.21 | -3.67 | I3->I4 |
| Co_23_6 | -7.75 | 3.86 | -21.25 | 2.18 | -2.13 | -5.66 | -3.86 | I3->I4 |
| Co_23_7 | 10.48 | -14.38 | -2.76 | -7.82 | 3.58 | -19.84 | -10.48 | I2->I3 |
| Co_23_8 | -7.78 | 4.58 | -23.12 | 2.24 | 1.70 | -8.37 | -4.58 | I3->I4 |
| Co_23_9 | -6.80 | 2.69 | -20.93 | 0.79 | 2.24 | -8.73 | -2.69 | I3->I4 |
| Co_23_10 | -7.87 | 3.94 | -21.03 | 1.37 | 1.38 | -8.52 | -3.94 | I3->I4 |
| Co_23_11 | -8.98 | 4.72 | -22.56 | 2.08 | 2.38 | -8.37 | -4.72 | I3->I4 |
| Co_23_12 | -7.39 | 3.70 | -21.59 | 1.68 | 1.79 | -8.94 | -3.70 | I3->I4 |
| Co_23_13 | -1.60 | -1.95 | -14.49 | -1.83 | 4.06 | -14.93 | -4.06 | I6->I7 |
| Co_23_14 | -6.92 | 3.03 | -20.75 | 1.65 | 1.79 | -9.54 | -3.03 | I3->I4 |
| Co_23_16 | -9.59 | 7.22 | -22.89 | 1.19 | 0.47 | -7.14 | -7.22 | I3->I4 |
| Co_23_17 | -8.75 | 5.96 | -19.20 | -0.36 | 0.84 | -9.22 | -5.96 | I3->I4 |
| Co_23_18 | -10.36 | 6.39 | -20.10 | 0.35 | 0.30 | -7.32 | -6.39 | I3->I4 |
| Co_23_19 | -10.21 | 6.01 | -19.04 | 0.70 | 0.36 | -8.57 | -6.01 | I3->I4 |
| Co_23_20 | -8.48 | 5.52 | -20.02 | 0.52 | 0.26 | -8.55 | -5.52 | I3->I4 |
| Co_23_21 | -2.89 | -0.61 | -15.30 | -3.54 | 2.29 | -10.70 | -2.29 | I6->I7 |
| Co_23_22 | -0.18 | -4.53 | -10.95 | -5.95 | 3.89 | -13.03 | -3.89 | I6->I7 |
| Co_23_23 | -4.47 | -0.03 | -17.91 | -1.04 | 0.90 | -8.19 | -0.90 | I6->I7 |
| Co_23_24 | -1.23 | -4.41 | -13.40 | -1.28 | 0.49 | -10.91 | -0.49 | I6->I7 |
| Co_23_25 | -3.50 | 0.33 | -18.91 | 0.13 | 2.93 | -11.72 | -2.93 | I6->I7 |
| Co_23_26 | -8.15 | 5.61 | -19.86 | -0.05 | 0.28 | -8.58 | -5.61 | I3->I4 |
| Co_23_27 | -2.57 | -1.64 | -13.86 | -4.10 | 2.44 | -11.02 | -2.44 | I6->I7 |
| Co_23_28 | -3.85 | -1.40 | -13.73 | -3.55 | 1.86 | -10.08 | -1.86 | I6->I7 |
| Co_24_0 | -7.53 | 2.25 | -20.86 | 1.62 | 0.00 | -6.22 | -2.25 | I3->I4 |
| Co_24_1 | -3.62 | -0.95 | -17.47 | -0.40 | 0.29 | -8.58 | -0.29 | I6->I7 |
| Co_24_2 | -0.96 | -4.79 | -12.37 | -3.03 | 2.21 | -11.79 | -2.21 | I6->I7 |
| Co_24_3 | 0.24 | -5.57 | -11.38 | -2.04 | 0.69 | -12.69 | -0.69 | I6->I7 |
| Co_24_4 | -8.83 | 4.42 | -19.99 | 0.95 | -0.29 | -7.00 | -4.42 | I3->I4 |
| Co_24_5 | -6.69 | 3.08 | -18.54 | -0.87 | -0.25 | -7.48 | -3.08 | I3->I4 |
| Co_24_6 | -5.72 | 1.23 | -18.60 | 1.98 | -2.30 | -7.33 | -1.98 | I5->I6 |
| Co_24_7 | 11.67 | -16.55 | -0.69 | -8.10 | 3.68 | -20.74 | -11.67 | I2->I3 |
| Co_24_8 | -6.12 | 2.28 | -20.74 | 2.22 | 1.37 | -9.74 | -2.28 | I3->I4 |
| Co_24_9 | -6.18 | 1.51 | -20.17 | 1.21 | 1.85 | -8.96 | -1.85 | I6->I7 |
| Co_24_10 | -6.76 | 2.03 | -19.23 | 1.58 | 1.09 | -9.45 | -2.03 | I3->I4 |
| Co_24_11 | -6.27 | 1.51 | -19.11 | 1.86 | 2.25 | -10.97 | -2.25 | I6->I7 |
| Co_24_12 | -4.87 | 0.59 | -18.17 | 1.24 | 1.84 | -11.36 | -1.84 | I6->I7 |
| Co_24_13 | -0.77 | -3.08 | -14.64 | -0.98 | 3.71 | -14.98 | -3.71 | I6->I7 |
| Co_24_14 | -4.91 | 0.45 | -17.75 | 0.94 | 1.82 | -11.29 | -1.82 | I6->I7 |
| Co_24_16 | -7.42 | 4.39 | -19.49 | 1.19 | -0.05 | -9.36 | -4.39 | I3->I4 |
| Co_24_17 | -7.50 | 3.50 | -17.68 | 0.54 | 0.16 | -9.77 | -3.50 | I3->I4 |
| Co_24_18 | -8.77 | 3.48 | -17.30 | -0.12 | 0.52 | -8.55 | -3.48 | I3->I4 |
| Co_24_19 | -8.72 | 4.44 | -17.87 | 0.28 | 0.95 | -9.81 | -4.44 | I3->I4 |
| Co_24_20 | -5.86 | 2.04 | -15.36 | -0.66 | -0.08 | -10.82 | -2.04 | I3->I4 |
| Co_24_21 | -1.68 | -2.63 | -13.54 | -3.59 | 2.09 | -11.38 | -2.09 | I6->I7 |
| Co_24_22 | 1.49 | -6.52 | -9.36 | -4.87 | 2.92 | -14.41 | -2.92 | I6->I7 |
| Co_24_23 | -2.81 | -2.16 | -15.88 | -0.93 | 0.63 | -9.59 | -0.63 | I6->I7 |
| Co_24_24 | 0.82 | -6.99 | -10.88 | -1.43 | 0.44 | -12.69 | -0.82 | I2->I3 |
| Co_24_25 | -1.88 | -2.03 | -16.35 | -0.36 | 2.49 | -12.61 | -2.49 | I6->I7 |
| Co_24_26 | -6.12 | 3.04 | -16.84 | -0.37 | 0.64 | -11.09 | -3.04 | I3->I4 |
| Co_24_27 | -0.43 | -4.66 | -10.94 | -4.63 | 2.92 | -13.01 | -2.92 | I6->I7 |
| Co_24_28 | -2.32 | -3.41 | -12.24 | -3.00 | 1.56 | -11.32 | -1.56 | I6->I7 |
| Co_25_0 | -8.08 | 4.54 | -23.15 | 1.53 | 1.26 | -6.84 | -4.54 | I3->I4 |
| Co_25_1 | -4.74 | 1.21 | -19.22 | -0.50 | 1.59 | -9.07 | -1.59 | I6->I7 |
| Co_25_2 | -3.11 | -2.02 | -16.25 | -2.48 | 4.45 | -11.32 | -4.45 | I6->I7 |
| Co_25_3 | 0.36 | -4.63 | -12.72 | -2.67 | 3.47 | -14.55 | -3.47 | I6->I7 |
| Co_25_4 | -10.06 | 7.05 | -23.60 | 2.42 | 0.92 | -7.47 | -7.05 | I3->I4 |
| Co_25_5 | -8.31 | 5.96 | -21.66 | 0.22 | 1.35 | -8.30 | -5.96 | I3->I4 |

| | | | | | | | | |
|----------|--------|--------|--------|-------|-------|--------|--------|--------|
| Co_25_6 | -7.32 | 3.74 | -21.86 | 3.08 | -1.26 | -7.12 | -3.74 | I3->I4 |
| Co_25_8 | -6.62 | 4.65 | -23.27 | 2.66 | 2.55 | -10.71 | -4.65 | I3->I4 |
| Co_25_9 | -6.81 | 3.70 | -22.50 | 2.06 | 2.36 | -9.54 | -3.70 | I3->I4 |
| Co_25_10 | -7.78 | 4.17 | -22.05 | 2.60 | 1.99 | -9.68 | -4.17 | I3->I4 |
| Co_25_11 | -8.31 | 4.69 | -22.87 | 3.22 | 2.61 | -10.08 | -4.69 | I3->I4 |
| Co_25_12 | -6.57 | 3.48 | -21.83 | 2.44 | 2.67 | -10.92 | -3.48 | I3->I4 |
| Co_25_13 | -1.55 | -0.95 | -16.01 | -0.75 | 4.40 | -15.89 | -4.40 | I6->I7 |
| Co_25_14 | -6.94 | 3.83 | -22.08 | 2.62 | 2.32 | -10.49 | -3.83 | I3->I4 |
| Co_25_16 | -9.59 | 7.63 | -22.32 | 2.00 | 0.45 | -8.92 | -7.63 | I3->I4 |
| Co_25_17 | -9.49 | 5.71 | -20.59 | 1.35 | 0.69 | -8.41 | -5.71 | I3->I4 |
| Co_25_18 | -10.14 | 6.97 | -20.15 | 0.82 | 0.35 | -8.58 | -6.97 | I3->I4 |
| Co_25_19 | -9.35 | 6.85 | -21.89 | 2.78 | 1.07 | -10.20 | -6.85 | I3->I4 |
| Co_25_20 | -6.78 | 4.79 | -19.70 | 0.99 | 1.66 | -11.69 | -4.79 | I3->I4 |
| Co_25_21 | -3.88 | -0.25 | -16.31 | -3.39 | 4.14 | -11.05 | -4.14 | I6->I7 |
| Co_25_22 | 0.26 | -4.18 | -12.86 | -3.83 | 4.48 | -14.61 | -4.48 | I6->I7 |
| Co_25_23 | -3.27 | -1.06 | -16.64 | -2.28 | 3.34 | -10.83 | -3.34 | I6->I7 |
| Co_25_24 | -0.17 | -5.16 | -12.54 | -2.13 | 2.81 | -13.54 | -2.81 | I6->I7 |
| Co_25_25 | -3.29 | 1.19 | -20.01 | 0.57 | 3.57 | -12.78 | -3.57 | I6->I7 |
| Co_25_26 | -8.65 | 5.92 | -20.30 | 0.94 | 0.62 | -9.26 | -5.92 | I3->I4 |
| Co_25_27 | -1.45 | -1.90 | -13.77 | -4.21 | 4.05 | -13.47 | -4.05 | I6->I7 |
| Co_25_28 | -2.27 | -2.80 | -12.63 | -3.98 | 4.50 | -13.55 | -4.50 | I6->I7 |
| Co_26_0 | -10.77 | 6.79 | -23.02 | 1.62 | -1.10 | -4.26 | -6.79 | I3->I4 |
| Co_26_1 | -6.00 | 2.82 | -18.67 | -0.43 | -1.36 | -7.10 | -2.82 | I3->I4 |
| Co_26_2 | -4.10 | 0.01 | -13.97 | -3.68 | 0.38 | -9.37 | -0.38 | I6->I7 |
| Co_26_3 | -0.60 | -2.53 | -11.14 | -3.05 | -0.70 | -12.71 | 0.60 | I2->I3 |
| Co_26_4 | -13.60 | 7.71 | -23.46 | 3.32 | 1.89 | -6.59 | -7.71 | I3->I4 |
| Co_26_5 | -9.20 | 4.71 | -20.43 | 1.89 | 1.32 | -9.03 | -4.71 | I3->I4 |
| Co_26_6 | -7.98 | 3.47 | -20.26 | 3.06 | 0.38 | -9.40 | -3.47 | I3->I4 |
| Co_26_7 | 7.90 | -10.90 | -3.61 | -7.27 | 1.44 | -18.30 | -7.90 | I2->I3 |
| Co_26_8 | -8.24 | 6.08 | -22.35 | 2.48 | 0.38 | -9.09 | -6.08 | I3->I4 |
| Co_26_9 | -8.91 | 5.32 | -20.96 | 1.27 | 0.01 | -7.47 | -5.32 | I3->I4 |
| Co_26_10 | -10.64 | 7.65 | -23.29 | 2.82 | -0.58 | -6.70 | -7.65 | I3->I4 |
| Co_26_11 | -9.86 | 6.33 | -22.33 | 3.03 | 0.87 | -8.77 | -6.33 | I3->I4 |
| Co_26_12 | -9.55 | 7.05 | -22.35 | 2.47 | -0.17 | -8.20 | -7.05 | I3->I4 |
| Co_26_13 | -4.32 | 0.97 | -15.54 | -1.20 | 2.43 | -13.08 | -2.43 | I6->I7 |
| Co_26_14 | -7.40 | 4.96 | -20.87 | 2.41 | 0.05 | -9.89 | -4.96 | I3->I4 |
| Co_26_16 | -14.69 | 12.79 | -28.54 | 5.76 | 1.31 | -7.36 | -12.79 | I3->I4 |
| Co_26_17 | -12.60 | 7.29 | -22.25 | 3.02 | 2.50 | -8.70 | -7.29 | I3->I4 |
| Co_26_18 | -15.36 | 11.91 | -26.41 | 4.64 | 1.12 | -6.63 | -11.91 | I3->I4 |
| Co_26_19 | -15.59 | 12.39 | -27.68 | 5.55 | 2.19 | -7.62 | -12.39 | I3->I4 |
| Co_26_20 | -11.84 | 7.78 | -22.21 | 3.42 | 1.54 | -9.44 | -7.78 | I3->I4 |
| Co_26_21 | -4.60 | 0.62 | -14.85 | -2.91 | 0.88 | -9.89 | -0.88 | I6->I7 |
| Co_26_22 | -1.43 | -1.82 | -11.80 | -5.35 | 2.67 | -13.01 | -2.67 | I6->I7 |
| Co_26_23 | -5.69 | 2.05 | -17.13 | -1.80 | -0.34 | -7.84 | -2.05 | I3->I4 |
| Co_26_24 | -1.80 | -2.96 | -13.56 | -0.50 | -1.01 | -10.91 | 0.50 | I5->I6 |
| Co_26_26 | -14.79 | 12.36 | -27.64 | 5.01 | 1.52 | -7.20 | -12.36 | I3->I4 |
| Co_26_27 | -4.39 | 0.59 | -13.25 | -3.53 | 0.21 | -10.37 | -0.59 | I3->I4 |
| Co_26_28 | -5.03 | 1.06 | -13.72 | -3.93 | 0.70 | -9.82 | -1.06 | I3->I4 |
| Co_27_0 | -8.90 | 4.35 | -22.23 | 0.72 | 0.79 | -5.46 | -4.35 | I3->I4 |
| Co_27_1 | -4.32 | 0.20 | -17.23 | -2.11 | 1.50 | -8.78 | -1.50 | I6->I7 |
| Co_27_2 | -2.24 | -3.07 | -13.45 | -3.90 | 3.14 | -11.23 | -3.14 | I6->I7 |
| Co_27_3 | 0.50 | -5.30 | -10.25 | -4.16 | 2.29 | -13.81 | -2.29 | I6->I7 |
| Co_27_4 | -9.59 | 5.99 | -20.84 | 0.56 | 0.28 | -7.14 | -5.99 | I3->I4 |
| Co_27_5 | -7.18 | 3.22 | -18.63 | -1.30 | 0.61 | -7.45 | -3.22 | I3->I4 |
| Co_27_6 | -5.89 | 1.95 | -18.34 | 1.28 | -1.83 | -7.91 | -1.95 | I3->I4 |
| Co_27_8 | -6.92 | 4.25 | -22.10 | 1.03 | 2.32 | -9.33 | -4.25 | I3->I4 |
| Co_27_9 | -4.86 | 1.03 | -18.19 | -0.69 | 2.99 | -11.02 | -2.99 | I6->I7 |
| Co_27_10 | -7.07 | 2.51 | -18.15 | -0.74 | 2.53 | -9.83 | -2.53 | I6->I7 |
| Co_27_11 | -7.07 | 3.17 | -19.53 | 0.31 | 3.18 | -10.79 | -3.18 | I6->I7 |
| Co_27_12 | -6.14 | 2.14 | -18.65 | 0.18 | 2.68 | -10.95 | -2.68 | I6->I7 |

| | | | | | | | | |
|----------|--------|--------|--------|--------|-------|--------|--------|--------|
| Co_27_13 | -1.42 | -2.19 | -13.36 | -3.49 | 5.15 | -15.43 | -5.15 | I6->I7 |
| Co_27_14 | -5.71 | 2.06 | -18.38 | -0.37 | 2.88 | -11.23 | -2.88 | I6->I7 |
| Co_27_16 | -10.01 | 7.38 | -21.43 | 0.47 | 0.31 | -7.46 | -7.38 | I3->I4 |
| Co_27_17 | -10.42 | 6.54 | -20.13 | 0.20 | 0.56 | -7.49 | -6.54 | I3->I4 |
| Co_27_18 | -11.16 | 6.70 | -19.25 | -0.23 | 0.60 | -7.40 | -6.70 | I3->I4 |
| Co_27_19 | -9.33 | 4.58 | -17.91 | 0.32 | 1.18 | -9.58 | -4.58 | I3->I4 |
| Co_27_20 | -7.00 | 3.77 | -16.23 | -1.09 | 0.62 | -10.81 | -3.77 | I3->I4 |
| Co_27_21 | -2.98 | -0.79 | -15.33 | -3.51 | 2.80 | -10.93 | -2.80 | I6->I7 |
| Co_27_22 | 1.10 | -5.24 | -9.68 | -6.52 | 4.24 | -14.64 | -4.24 | I6->I7 |
| Co_27_23 | -3.72 | -0.35 | -16.60 | -2.45 | 1.74 | -9.37 | -1.74 | I6->I7 |
| Co_27_24 | -0.78 | -4.96 | -12.13 | -2.82 | 1.48 | -11.53 | -1.48 | I6->I7 |
| Co_27_25 | -1.96 | -1.27 | -16.50 | -2.68 | 4.87 | -13.19 | -4.87 | I6->I7 |
| Co_27_26 | -8.47 | 4.96 | -17.72 | -0.40 | -0.02 | -9.08 | -4.96 | I3->I4 |
| Co_27_27 | -1.57 | -2.98 | -12.21 | -5.35 | 4.18 | -12.81 | -4.18 | I6->I7 |
| Co_27_28 | -3.21 | -2.06 | -12.89 | -3.94 | 2.76 | -11.40 | -2.76 | I6->I7 |
| Co_28_0 | -9.20 | 4.42 | -22.08 | 0.87 | 0.59 | -5.35 | -4.42 | I3->I4 |
| Co_28_1 | -4.92 | 1.04 | -18.21 | -1.68 | 1.16 | -8.12 | -1.16 | I6->I7 |
| Co_28_2 | -3.13 | -2.31 | -14.38 | -3.99 | 2.89 | -9.82 | -2.89 | I6->I7 |
| Co_28_3 | 0.00 | -5.11 | -10.28 | -4.06 | 2.27 | -13.55 | -2.27 | I6->I7 |
| Co_28_4 | -4.37 | 1.01 | -15.70 | -2.45 | 2.86 | -12.09 | -2.86 | I6->I7 |
| Co_28_5 | -6.05 | 1.74 | -16.29 | -1.62 | 1.00 | -9.53 | -1.74 | I3->I4 |
| Co_28_6 | -5.23 | 1.10 | -17.93 | 1.26 | -1.49 | -8.44 | -1.26 | I5->I6 |
| Co_28_8 | -6.55 | 2.61 | -19.48 | 0.62 | 2.38 | -10.32 | -2.61 | I3->I4 |
| Co_28_9 | -4.91 | 0.66 | -17.04 | -1.59 | 3.53 | -11.38 | -3.53 | I6->I7 |
| Co_28_10 | -7.83 | 2.93 | -18.06 | -0.71 | 2.33 | -9.39 | -2.93 | I3->I4 |
| Co_28_11 | -8.31 | 3.83 | -20.35 | 1.16 | 2.60 | -9.67 | -3.83 | I3->I4 |
| Co_28_12 | -5.90 | 1.55 | -17.82 | -0.60 | 3.26 | -11.24 | -3.26 | I6->I7 |
| Co_28_13 | -2.12 | -1.74 | -13.86 | -2.76 | 4.56 | -14.81 | -4.56 | I6->I7 |
| Co_28_14 | -6.20 | 2.34 | -18.76 | 0.06 | 2.66 | -10.85 | -2.66 | I6->I7 |
| Co_28_16 | -9.78 | 6.71 | -20.07 | 0.49 | -0.36 | -7.73 | -6.71 | I3->I4 |
| Co_28_17 | -8.49 | 4.71 | -18.33 | -0.21 | 1.49 | -9.90 | -4.71 | I3->I4 |
| Co_28_18 | -10.53 | 6.63 | -19.51 | -0.05 | 0.54 | -7.81 | -6.63 | I3->I4 |
| Co_28_19 | -9.77 | 5.68 | -19.19 | 0.62 | 0.66 | -8.75 | -5.68 | I3->I4 |
| Co_28_20 | -7.05 | 2.52 | -15.90 | -0.98 | 1.02 | -10.35 | -2.52 | I3->I4 |
| Co_28_21 | -3.77 | -0.90 | -15.04 | -2.98 | 2.19 | -10.23 | -2.19 | I6->I7 |
| Co_28_22 | -0.04 | -4.97 | -9.75 | -6.24 | 4.30 | -14.03 | -4.30 | I6->I7 |
| Co_28_23 | -4.40 | -0.23 | -16.51 | -2.23 | 1.37 | -8.74 | -1.37 | I6->I7 |
| Co_28_24 | -0.79 | -5.05 | -11.71 | -2.08 | 0.75 | -11.86 | -0.75 | I6->I7 |
| Co_28_25 | -2.97 | -0.66 | -17.52 | -1.87 | 4.87 | -12.60 | -4.87 | I6->I7 |
| Co_28_26 | -8.42 | 5.10 | -18.87 | -0.31 | 0.68 | -8.91 | -5.10 | I3->I4 |
| Co_28_27 | -3.90 | -1.22 | -14.90 | -2.59 | 2.43 | -10.55 | -2.43 | I6->I7 |
| Co_28_28 | -3.74 | -1.70 | -12.95 | -3.87 | 2.46 | -10.94 | -2.46 | I6->I7 |
| Rh_23_0 | -1.59 | -4.28 | -10.39 | -7.80 | 4.72 | -11.40 | -4.72 | I6->I7 |
| Rh_23_1 | 2.10 | -7.42 | -6.73 | -10.09 | 5.10 | -13.70 | -5.10 | I6->I7 |
| Rh_23_2 | 4.41 | -10.75 | -2.24 | -12.66 | 7.41 | -16.91 | -7.41 | I6->I7 |
| Rh_23_3 | 6.28 | -11.89 | -0.38 | -12.64 | 6.42 | -18.53 | -6.42 | I6->I7 |
| Rh_23_4 | -1.88 | -3.61 | -8.82 | -7.97 | 4.71 | -13.17 | -4.71 | I6->I7 |
| Rh_23_5 | 1.97 | -7.16 | -4.92 | -9.98 | 5.32 | -15.98 | -5.32 | I6->I7 |
| Rh_23_6 | 2.62 | -8.34 | -5.95 | -7.04 | 2.79 | -14.81 | -2.79 | I6->I7 |
| Rh_23_7 | 16.80 | -22.04 | 9.47 | -17.85 | 8.98 | -26.10 | -16.80 | I2->I3 |
| Rh_23_8 | -0.88 | -3.56 | -10.96 | -6.82 | 6.39 | -14.91 | -6.39 | I6->I7 |
| Rh_23_9 | -0.33 | -4.93 | -9.29 | -8.19 | 7.02 | -15.02 | -7.02 | I6->I7 |
| Rh_23_10 | -1.10 | -4.33 | -8.76 | -7.56 | 5.84 | -14.83 | -5.84 | I6->I7 |
| Rh_23_11 | -1.76 | -3.83 | -10.13 | -6.97 | 7.27 | -15.31 | -7.27 | I6->I7 |
| Rh_23_12 | -0.22 | -4.70 | -9.10 | -7.59 | 6.81 | -15.95 | -6.81 | I6->I7 |
| Rh_23_13 | 5.02 | -9.60 | -2.49 | -11.43 | 9.17 | -21.41 | -9.17 | I6->I7 |
| Rh_23_14 | -0.30 | -4.68 | -8.96 | -7.35 | 6.31 | -15.76 | -6.31 | I6->I7 |
| Rh_23_16 | -1.29 | -3.65 | -7.94 | -9.38 | 6.79 | -15.26 | -6.79 | I6->I7 |
| Rh_23_17 | -0.49 | -4.29 | -5.77 | -9.38 | 6.19 | -17.00 | -6.19 | I6->I7 |
| Rh_23_18 | -1.83 | -3.79 | -7.10 | -8.90 | 6.70 | -15.82 | -6.70 | I6->I7 |

| | | | | | | | | |
|----------|-------|--------|--------|--------|------|--------|--------|--------|
| Rh_23_19 | -1.68 | -3.74 | -6.10 | -8.65 | 5.94 | -16.51 | -5.94 | I6->I7 |
| Rh_23_20 | -0.56 | -4.25 | -7.21 | -8.53 | 6.01 | -16.18 | -6.01 | I6->I7 |
| Rh_23_21 | 3.72 | -9.20 | -3.09 | -12.37 | 7.19 | -16.99 | -7.19 | I6->I7 |
| Rh_23_22 | 6.56 | -12.66 | 0.84 | -15.10 | 8.84 | -19.21 | -8.84 | I6->I7 |
| Rh_23_23 | 2.69 | -8.41 | -5.58 | -10.54 | 5.43 | -14.33 | -5.43 | I6->I7 |
| Rh_23_24 | 5.88 | -12.95 | -0.64 | -11.15 | 5.50 | -17.37 | -5.88 | I2->I3 |
| Rh_23_25 | 2.39 | -6.90 | -7.43 | -9.34 | 7.95 | -17.41 | -7.95 | I6->I7 |
| Rh_23_26 | -0.65 | -4.43 | -6.22 | -9.63 | 6.53 | -16.34 | -6.53 | I6->I7 |
| Rh_23_27 | 4.52 | -10.66 | -0.92 | -13.27 | 7.37 | -17.77 | -7.37 | I6->I7 |
| Rh_23_28 | 3.05 | -9.46 | -2.00 | -12.52 | 6.83 | -16.63 | -6.83 | I6->I7 |
| Rh_24_0 | -0.01 | -6.57 | -8.03 | -8.08 | 4.58 | -12.63 | -4.58 | I6->I7 |
| Rh_24_1 | 3.68 | -9.52 | -4.79 | -10.02 | 4.96 | -15.06 | -4.96 | I6->I7 |
| Rh_24_2 | 5.98 | -12.86 | -0.31 | -12.27 | 6.69 | -17.97 | -6.69 | I6->I7 |
| Rh_24_3 | 7.05 | -13.44 | 0.92 | -12.13 | 5.81 | -18.94 | -7.05 | I2->I3 |
| Rh_24_4 | -0.20 | -5.86 | -6.58 | -7.96 | 4.46 | -14.60 | -4.46 | I6->I7 |
| Rh_24_5 | 2.71 | -8.16 | -4.24 | -9.53 | 4.39 | -15.92 | -4.39 | I6->I7 |
| Rh_24_6 | 4.32 | -10.58 | -3.77 | -6.81 | 2.35 | -16.24 | -4.32 | I2->I3 |
| Rh_24_7 | 18.00 | -24.04 | 11.03 | -17.74 | 8.85 | -26.83 | -18.00 | I2->I3 |
| Rh_24_8 | 0.91 | -6.09 | -8.37 | -7.01 | 6.17 | -16.35 | -6.17 | I6->I7 |
| Rh_24_9 | 1.08 | -7.01 | -7.66 | -7.98 | 6.69 | -15.86 | -6.69 | I6->I7 |
| Rh_24_10 | 0.33 | -6.32 | -6.83 | -7.67 | 5.99 | -16.24 | -5.99 | I6->I7 |
| Rh_24_11 | 0.76 | -6.87 | -6.73 | -7.19 | 6.84 | -17.55 | -6.84 | I6->I7 |
| Rh_24_12 | 2.07 | -7.74 | -5.97 | -7.79 | 6.63 | -17.94 | -6.63 | I6->I7 |
| Rh_24_13 | 6.11 | -11.32 | -1.83 | -10.71 | 8.98 | -21.97 | -8.98 | I6->I7 |
| Rh_24_14 | 1.61 | -7.16 | -6.16 | -7.93 | 6.54 | -17.63 | -6.54 | I6->I7 |
| Rh_24_16 | 1.53 | -6.17 | -5.28 | -8.60 | 5.94 | -18.16 | -5.94 | I6->I7 |
| Rh_24_17 | 1.61 | -7.73 | -3.68 | -9.31 | 6.80 | -18.43 | -6.80 | I6->I7 |
| Rh_24_18 | -1.57 | -5.09 | -5.30 | -9.13 | 5.97 | -15.62 | -5.97 | I6->I7 |
| Rh_24_19 | -0.07 | -6.27 | -4.38 | -8.46 | 6.25 | -17.80 | -6.25 | I6->I7 |
| Rh_24_20 | 3.87 | -10.05 | -0.73 | -10.68 | 6.84 | -19.99 | -6.84 | I6->I7 |
| Rh_24_21 | 5.67 | -11.85 | -0.41 | -12.68 | 6.93 | -18.39 | -6.93 | I6->I7 |
| Rh_24_22 | 8.70 | -15.42 | 4.10 | -15.00 | 8.36 | -21.48 | -8.70 | I2->I3 |
| Rh_24_23 | 4.18 | -10.37 | -3.71 | -10.23 | 5.09 | -15.70 | -5.09 | I6->I7 |
| Rh_24_24 | 7.64 | -14.95 | 1.08 | -10.66 | 4.96 | -18.81 | -7.64 | I2->I3 |
| Rh_24_25 | 4.82 | -10.05 | -4.18 | -10.01 | 7.66 | -18.98 | -7.66 | I6->I7 |
| Rh_24_26 | 2.21 | -7.21 | -3.85 | -9.09 | 6.24 | -19.05 | -6.24 | I6->I7 |
| Rh_24_27 | 6.18 | -12.90 | 1.06 | -13.83 | 7.78 | -19.03 | -7.78 | I6->I7 |
| Rh_24_28 | 4.71 | -11.75 | 0.08 | -12.77 | 6.72 | -17.73 | -6.72 | I6->I7 |
| Rh_25_0 | -1.23 | -4.01 | -10.50 | -8.21 | 6.43 | -13.23 | -6.43 | I6->I7 |
| Rh_25_1 | 2.36 | -7.45 | -6.35 | -10.66 | 6.79 | -15.43 | -6.79 | I6->I7 |
| Rh_25_2 | 4.05 | -10.41 | -3.15 | -12.76 | 9.62 | -18.10 | -9.62 | I6->I7 |
| Rh_25_3 | 6.99 | -12.33 | -0.40 | -12.79 | 8.43 | -20.65 | -8.43 | I6->I7 |
| Rh_25_4 | -1.61 | -3.29 | -9.86 | -7.21 | 6.01 | -14.79 | -6.01 | I6->I7 |
| Rh_25_5 | 0.80 | -4.98 | -7.41 | -9.11 | 6.06 | -16.11 | -6.06 | I6->I7 |
| Rh_25_6 | 1.37 | -6.46 | -7.93 | -6.18 | 3.53 | -15.06 | -3.53 | I6->I7 |
| Rh_25_8 | -0.82 | -2.66 | -12.00 | -6.11 | 7.37 | -16.52 | -7.37 | I6->I7 |
| Rh_25_9 | -0.33 | -4.21 | -10.41 | -7.19 | 7.53 | -16.13 | -7.53 | I6->I7 |
| Rh_25_10 | -1.27 | -3.51 | -10.20 | -6.44 | 6.65 | -15.98 | -6.65 | I6->I7 |
| Rh_25_11 | -1.60 | -3.39 | -10.55 | -6.14 | 7.47 | -16.54 | -7.47 | I6->I7 |
| Rh_25_12 | -0.21 | -4.08 | -10.25 | -6.63 | 7.59 | -17.17 | -7.59 | I6->I7 |
| Rh_25_13 | 4.70 | -8.26 | -4.54 | -10.02 | 9.79 | -22.40 | -9.79 | I6->I7 |
| Rh_25_14 | -0.43 | -3.83 | -10.27 | -6.54 | 7.06 | -16.73 | -7.06 | I6->I7 |
| Rh_25_16 | -1.74 | -2.25 | -9.17 | -7.34 | 6.37 | -16.62 | -6.37 | I6->I7 |
| Rh_25_17 | -1.35 | -3.11 | -8.05 | -7.53 | 6.18 | -16.89 | -6.18 | I6->I7 |
| Rh_25_18 | -1.84 | -3.39 | -6.72 | -8.47 | 6.56 | -16.88 | -6.56 | I6->I7 |
| Rh_25_19 | -1.11 | -3.74 | -7.26 | -7.10 | 6.99 | -18.53 | -6.99 | I6->I7 |
| Rh_25_20 | 1.90 | -6.73 | -4.83 | -8.38 | 7.00 | -19.70 | -7.00 | I6->I7 |
| Rh_25_21 | 3.57 | -8.82 | -3.67 | -13.05 | 9.49 | -18.26 | -9.49 | I6->I7 |
| Rh_25_22 | 7.55 | -12.73 | 0.47 | -14.15 | 9.70 | -21.58 | -9.70 | I6->I7 |
| Rh_25_23 | 3.16 | -8.50 | -5.24 | -10.93 | 7.52 | -16.76 | -7.52 | I6->I7 |

| | | | | | | | | |
|----------|-------|--------|--------|--------|-------|--------|--------|--------|
| Rh_25_24 | 6.61 | -13.42 | -0.28 | -11.49 | 7.61 | -19.77 | -7.61 | I6->I7 |
| Rh_25_25 | 2.92 | -6.32 | -8.35 | -8.58 | 8.56 | -18.98 | -8.56 | I6->I7 |
| Rh_25_26 | -1.20 | -3.15 | -7.71 | -7.82 | 6.07 | -16.93 | -6.07 | I6->I7 |
| Rh_25_27 | 4.50 | -9.92 | -1.91 | -13.11 | 9.03 | -19.33 | -9.03 | I6->I7 |
| Rh_25_28 | 4.74 | -11.06 | -0.15 | -13.31 | 9.53 | -20.49 | -9.53 | I6->I7 |
| Rh_26_0 | -2.51 | -3.17 | -9.71 | -7.53 | 4.57 | -12.40 | -4.57 | I6->I7 |
| Rh_26_1 | 1.41 | -6.52 | -5.55 | -9.70 | 4.00 | -14.38 | -4.00 | I6->I7 |
| Rh_26_2 | 3.31 | -9.42 | -1.24 | -12.65 | 5.97 | -16.70 | -5.97 | I6->I7 |
| Rh_26_3 | 6.18 | -11.41 | 1.81 | -12.61 | 4.79 | -19.51 | -6.18 | I2->I3 |
| Rh_26_4 | -3.70 | -2.39 | -9.81 | -6.78 | 7.93 | -15.99 | -7.93 | I6->I7 |
| Rh_26_5 | 0.73 | -5.78 | -6.69 | -7.43 | 6.72 | -18.29 | -6.72 | I6->I7 |
| Rh_26_6 | 0.83 | -7.05 | -6.42 | -6.30 | 5.75 | -17.55 | -5.75 | I6->I7 |
| Rh_26_7 | 14.43 | -19.33 | 8.52 | -16.55 | 6.80 | -24.60 | -14.43 | I2->I3 |
| Rh_26_8 | -1.84 | -2.34 | -10.23 | -6.38 | 5.52 | -15.47 | -5.52 | I6->I7 |
| Rh_26_9 | -1.97 | -3.08 | -9.21 | -6.92 | 5.00 | -14.56 | -5.00 | I6->I7 |
| Rh_26_10 | -2.58 | -3.23 | -8.31 | -7.32 | 5.38 | -14.67 | -5.38 | I6->I7 |
| Rh_26_11 | -2.93 | -2.42 | -9.98 | -5.79 | 5.90 | -15.51 | -5.90 | I6->I7 |
| Rh_26_12 | -2.80 | -1.48 | -10.42 | -6.29 | 4.92 | -14.68 | -4.92 | I6->I7 |
| Rh_26_13 | 3.37 | -7.94 | -2.56 | -10.61 | 7.88 | -20.87 | -7.88 | I6->I7 |
| Rh_26_14 | -0.66 | -3.37 | -8.89 | -6.24 | 5.14 | -16.72 | -5.14 | I6->I7 |
| Rh_26_16 | -5.04 | 2.35 | -15.06 | -3.89 | 7.31 | -16.41 | -7.31 | I6->I7 |
| Rh_26_17 | -2.89 | -2.80 | -8.54 | -6.60 | 8.79 | -18.71 | -8.79 | I6->I7 |
| Rh_26_18 | -5.21 | -0.16 | -11.43 | -5.72 | 8.17 | -16.39 | -8.17 | I6->I7 |
| Rh_26_19 | -6.15 | 1.88 | -13.55 | -4.12 | 8.07 | -16.86 | -8.07 | I6->I7 |
| Rh_26_20 | -0.42 | -5.40 | -6.39 | -6.97 | 8.74 | -20.30 | -8.74 | I6->I7 |
| Rh_26_21 | 2.00 | -7.02 | -4.40 | -11.23 | 5.96 | -16.05 | -5.96 | I6->I7 |
| Rh_26_22 | 5.71 | -11.87 | 1.68 | -14.33 | 8.04 | -19.97 | -8.04 | I6->I7 |
| Rh_26_23 | 1.85 | -7.17 | -4.51 | -10.74 | 4.92 | -15.07 | -4.92 | I6->I7 |
| Rh_26_24 | 5.07 | -11.92 | -0.53 | -9.75 | 3.83 | -17.44 | -5.07 | I2->I3 |
| Rh_26_26 | -4.50 | 0.76 | -12.66 | -5.35 | 8.55 | -17.54 | -8.55 | I6->I7 |
| Rh_26_27 | 1.83 | -7.58 | -1.62 | -12.61 | 6.18 | -16.95 | -6.18 | I6->I7 |
| Rh_26_28 | 3.03 | -9.91 | 0.73 | -13.62 | 7.16 | -18.12 | -7.16 | I6->I7 |
| Rh_27_0 | -1.15 | -5.04 | -8.71 | -9.06 | 5.74 | -12.52 | -5.74 | I6->I7 |
| Rh_27_1 | 2.69 | -7.97 | -5.10 | -11.19 | 6.04 | -15.21 | -6.04 | I6->I7 |
| Rh_27_2 | 5.00 | -11.66 | -0.74 | -13.61 | 7.98 | -17.70 | -7.98 | I6->I7 |
| Rh_27_3 | 7.84 | -13.62 | 2.42 | -14.16 | 7.47 | -20.69 | -7.84 | I2->I3 |
| Rh_27_4 | -1.29 | -4.17 | -7.61 | -8.62 | 5.48 | -14.54 | -5.48 | I6->I7 |
| Rh_27_5 | 1.78 | -7.32 | -4.62 | -10.40 | 5.40 | -15.59 | -5.40 | I6->I7 |
| Rh_27_6 | 2.32 | -7.96 | -5.45 | -7.88 | 3.43 | -15.19 | -3.43 | I6->I7 |
| Rh_27_8 | -0.28 | -4.55 | -9.45 | -7.51 | 7.03 | -15.98 | -7.03 | I6->I7 |
| Rh_27_9 | 1.15 | -6.49 | -6.65 | -9.73 | 8.04 | -17.06 | -8.04 | I6->I7 |
| Rh_27_10 | 0.18 | -6.05 | -5.69 | -9.90 | 7.44 | -16.72 | -7.44 | I6->I7 |
| Rh_27_11 | -0.16 | -5.90 | -6.41 | -8.90 | 8.33 | -17.71 | -8.33 | I6->I7 |
| Rh_27_12 | 0.92 | -6.29 | -6.12 | -9.01 | 7.73 | -17.97 | -7.73 | I6->I7 |
| Rh_27_13 | 4.01 | -9.21 | -2.48 | -12.19 | 10.16 | -21.03 | -10.16 | I6->I7 |
| Rh_27_14 | 1.45 | -6.68 | -5.69 | -9.36 | 7.99 | -18.45 | -7.99 | I6->I7 |
| Rh_27_16 | -0.53 | -4.46 | -6.46 | -9.46 | 6.59 | -16.42 | -6.59 | I6->I7 |
| Rh_27_17 | -0.92 | -4.55 | -5.95 | -9.27 | 6.59 | -16.63 | -6.59 | I6->I7 |
| Rh_27_18 | -2.13 | -3.77 | -6.65 | -8.67 | 6.22 | -15.74 | -6.22 | I6->I7 |
| Rh_27_19 | -0.89 | -5.56 | -4.49 | -9.59 | 7.51 | -17.72 | -7.51 | I6->I7 |
| Rh_27_20 | 0.76 | -5.67 | -3.86 | -10.03 | 6.26 | -18.19 | -6.26 | I6->I7 |
| Rh_27_21 | 3.52 | -8.90 | -3.43 | -12.33 | 7.67 | -17.28 | -7.67 | I6->I7 |
| Rh_27_22 | 8.04 | -13.85 | 3.23 | -16.06 | 9.60 | -21.69 | -9.60 | I6->I7 |
| Rh_27_23 | 3.82 | -9.81 | -3.06 | -12.10 | 6.75 | -16.34 | -6.75 | I6->I7 |
| Rh_27_24 | 6.33 | -13.65 | 0.33 | -11.97 | 6.33 | -18.10 | -6.33 | I2->I3 |
| Rh_27_25 | 4.24 | -9.06 | -4.62 | -11.47 | 9.69 | -19.52 | -9.69 | I6->I7 |
| Rh_27_26 | 0.18 | -5.23 | -4.76 | -9.88 | 6.94 | -17.98 | -6.94 | I6->I7 |
| Rh_27_27 | 4.85 | -10.74 | -0.55 | -13.70 | 8.36 | -18.96 | -8.36 | I6->I7 |
| Rh_27_28 | 3.76 | -10.28 | -0.59 | -13.41 | 7.70 | -17.93 | -7.70 | I6->I7 |
| Rh_28_0 | -1.48 | -4.79 | -8.75 | -8.91 | 5.51 | -12.32 | -5.51 | I6->I7 |

| | | | | | | | | |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|
| Rh_28_1 | 2.59 | -8.25 | -4.75 | -11.31 | 6.04 | -15.06 | -6.04 | I6->I7 |
| Rh_28_2 | 4.17 | -11.21 | -1.49 | -13.28 | 7.93 | -16.85 | -7.93 | I6->I7 |
| Rh_28_3 | 6.40 | -12.77 | 1.79 | -14.07 | 7.34 | -19.43 | -7.34 | I6->I7 |
| Rh_28_4 | -1.30 | -4.31 | -7.58 | -8.33 | 5.29 | -14.51 | -5.29 | I6->I7 |
| Rh_28_5 | 2.70 | -8.48 | -2.54 | -10.89 | 5.97 | -17.49 | -5.97 | I6->I7 |
| Rh_28_6 | 3.66 | -9.42 | -3.77 | -8.15 | 3.54 | -16.60 | -3.66 | I2->I3 |
| Rh_28_8 | 0.43 | -5.67 | -7.19 | -8.72 | 7.60 | -17.19 | -7.60 | I6->I7 |
| Rh_28_9 | 0.68 | -7.10 | -4.71 | -11.00 | 8.28 | -16.90 | -8.28 | I6->I7 |
| Rh_28_10 | -0.90 | -5.07 | -7.23 | -8.45 | 6.52 | -15.61 | -6.52 | I6->I7 |
| Rh_28_11 | -1.35 | -4.59 | -8.05 | -8.00 | 7.85 | -16.60 | -7.85 | I6->I7 |
| Rh_28_12 | 0.57 | -6.53 | -5.62 | -9.84 | 8.08 | -17.41 | -8.08 | I6->I7 |
| Rh_28_13 | 5.07 | -10.41 | -0.60 | -12.79 | 10.35 | -22.35 | -10.35 | I6->I7 |
| Rh_28_14 | 1.29 | -6.80 | -5.47 | -9.45 | 8.22 | -18.53 | -8.22 | I6->I7 |
| Rh_28_16 | -1.31 | -3.54 | -6.73 | -9.24 | 6.42 | -16.34 | -6.42 | I6->I7 |
| Rh_28_17 | 0.30 | -5.78 | -4.37 | -10.16 | 7.79 | -18.52 | -7.79 | I6->I7 |
| Rh_28_18 | -1.42 | -4.24 | -5.91 | -9.24 | 6.42 | -16.35 | -6.42 | I6->I7 |
| Rh_28_19 | -0.60 | -5.02 | -5.12 | -8.91 | 6.39 | -17.47 | -6.39 | I6->I7 |
| Rh_28_20 | 1.43 | -7.10 | -3.08 | -10.42 | 7.19 | -18.75 | -7.19 | I6->I7 |
| Rh_28_21 | 3.31 | -9.55 | -2.12 | -13.27 | 7.75 | -16.86 | -7.75 | I6->I7 |
| Rh_28_22 | 7.08 | -13.77 | 3.78 | -16.92 | 10.03 | -20.94 | -10.03 | I6->I7 |
| Rh_28_23 | 3.06 | -9.19 | -3.53 | -11.57 | 6.29 | -15.79 | -6.29 | I6->I7 |
| Rh_28_24 | 6.35 | -13.74 | 1.05 | -11.84 | 6.08 | -18.64 | -6.35 | I2->I3 |
| Rh_28_25 | 3.61 | -8.27 | -5.16 | -11.04 | 9.11 | -18.99 | -9.11 | I6->I7 |
| Rh_28_26 | 1.33 | -6.21 | -3.82 | -10.03 | 6.70 | -18.71 | -6.70 | I6->I7 |
| Rh_28_27 | 3.87 | -10.29 | -1.25 | -13.38 | 8.06 | -17.74 | -8.06 | I6->I7 |
| Rh_28_28 | 3.21 | -9.87 | -0.66 | -13.34 | 7.40 | -17.47 | -7.40 | I6->I7 |
| Ir_23_0 | -7.70 | 2.94 | -16.49 | -2.24 | -10.03 | 2.78 | -2.94 | I3->I4 |
| Ir_23_1 | -3.95 | -0.12 | -12.98 | -4.65 | -9.57 | 0.53 | -0.53 | I7->I2 |
| Ir_23_2 | -1.72 | -3.19 | -8.81 | -7.17 | -7.27 | -2.59 | 1.72 | I2->I3 |
| Ir_23_3 | 0.59 | -4.51 | -6.28 | -8.34 | -7.63 | -4.57 | -0.59 | I2->I3 |
| Ir_23_4 | -8.81 | 4.36 | -16.23 | -1.12 | -10.34 | 1.40 | -4.36 | I3->I4 |
| Ir_23_5 | -4.65 | 0.95 | -11.63 | -4.47 | -9.38 | -1.55 | -0.95 | I3->I4 |
| Ir_23_6 | -4.06 | -0.61 | -12.84 | -0.55 | -12.24 | -0.44 | 0.44 | I7->I2 |
| Ir_23_7 | 11.06 | -14.58 | 3.62 | -13.90 | -4.92 | -12.02 | -11.06 | I2->I3 |
| Ir_23_8 | -6.81 | 3.43 | -16.93 | -1.05 | -8.67 | -0.71 | -3.43 | I3->I4 |
| Ir_23_9 | -6.54 | 2.80 | -15.65 | -2.79 | -7.96 | -0.61 | -2.80 | I3->I4 |
| Ir_23_10 | -7.17 | 2.81 | -14.89 | -1.74 | -9.20 | -0.55 | -2.81 | I3->I4 |
| Ir_23_11 | -7.87 | 3.81 | -16.51 | -1.37 | -7.75 | -1.05 | -3.81 | I3->I4 |
| Ir_23_12 | -6.15 | 2.39 | -15.15 | -1.88 | -8.18 | -1.76 | -2.39 | I3->I4 |
| Ir_23_13 | -0.82 | -2.45 | -8.79 | -6.08 | -5.54 | -7.06 | 0.82 | I2->I3 |
| Ir_23_14 | -6.60 | 2.97 | -15.85 | -1.19 | -8.67 | -1.39 | -2.97 | I3->I4 |
| Ir_23_16 | -8.25 | 4.60 | -16.11 | -2.79 | -7.43 | -0.76 | -4.60 | I3->I4 |
| Ir_23_17 | -6.72 | 3.60 | -13.88 | -2.67 | -7.96 | -3.10 | -3.60 | I3->I4 |
| Ir_23_18 | -8.95 | 4.28 | -14.36 | -2.38 | -8.04 | -1.29 | -4.28 | I3->I4 |
| Ir_23_19 | -8.66 | 4.50 | -14.26 | -1.30 | -8.96 | -2.05 | -4.50 | I3->I4 |
| Ir_23_20 | -8.29 | 4.56 | -15.25 | -2.40 | -8.31 | -1.05 | -4.56 | I3->I4 |
| Ir_23_21 | -2.16 | -2.53 | -8.92 | -6.65 | -7.76 | -2.72 | 2.16 | I2->I3 |
| Ir_23_22 | 0.51 | -5.28 | -5.52 | -9.71 | -5.79 | -4.95 | -0.51 | I2->I3 |
| Ir_23_23 | -3.40 | -1.07 | -11.93 | -4.97 | -9.30 | -0.07 | 0.07 | I7->I2 |
| Ir_23_24 | -0.32 | -5.26 | -7.03 | -6.26 | -8.92 | -2.95 | 0.32 | I2->I3 |
| Ir_23_25 | -3.78 | 0.70 | -13.95 | -4.04 | -6.85 | -2.83 | -0.70 | I3->I4 |
| Ir_23_26 | -7.83 | 3.97 | -13.77 | -3.71 | -7.88 | -1.52 | -3.97 | I3->I4 |
| Ir_23_27 | -1.34 | -3.90 | -6.62 | -8.03 | -7.39 | -3.47 | 1.34 | I2->I3 |
| Ir_23_28 | -2.87 | -2.21 | -8.28 | -6.80 | -8.04 | -2.55 | 2.21 | I3->I4 |
| Ir_24_0 | -6.15 | 0.68 | -14.07 | -2.66 | -10.12 | 1.58 | -1.58 | I7->I2 |
| Ir_24_1 | -2.34 | -2.30 | -10.87 | -4.60 | -9.80 | -0.83 | 0.83 | I7->I2 |
| Ir_24_2 | -0.18 | -5.35 | -6.77 | -6.64 | -8.07 | -3.72 | 0.18 | I2->I3 |
| Ir_24_3 | 0.88 | -5.68 | -5.67 | -7.25 | -8.49 | -4.53 | -0.88 | I2->I3 |
| Ir_24_4 | -7.20 | 2.24 | -14.23 | -0.88 | -10.71 | 0.04 | -2.24 | I3->I4 |
| Ir_24_5 | -4.01 | -0.15 | -11.29 | -3.33 | -10.63 | -1.34 | 0.15 | I3->I4 |

| | | | | | | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|
| Ir_24_6 | -2.34 | -2.93 | -10.69 | 0.02 | -12.87 | -1.92 | -0.02 | I5-->I6 |
| Ir_24_7 | 12.48 | -17.24 | 5.85 | -13.75 | -5.21 | -12.86 | -12.48 | I2-->I3 |
| Ir_24_8 | -5.22 | 1.16 | -14.58 | -1.23 | -8.83 | -2.05 | -1.16 | I3-->I4 |
| Ir_24_9 | -5.05 | 0.67 | -14.02 | -2.52 | -8.30 | -1.51 | -0.67 | I3-->I4 |
| Ir_24_10 | -5.79 | 1.28 | -13.44 | -1.89 | -9.02 | -1.87 | -1.28 | I3-->I4 |
| Ir_24_11 | -5.22 | -0.02 | -12.64 | -1.38 | -8.20 | -3.28 | 0.02 | I3-->I4 |
| Ir_24_12 | -3.93 | -0.49 | -12.34 | -1.90 | -8.44 | -3.65 | 0.49 | I3-->I4 |
| Ir_24_13 | 0.40 | -4.13 | -8.26 | -5.55 | -5.49 | -7.71 | -0.40 | I2-->I3 |
| Ir_24_14 | -4.62 | 0.38 | -12.63 | -2.31 | -8.33 | -3.23 | -0.38 | I3-->I4 |
| Ir_24_16 | -5.37 | 1.85 | -12.62 | -1.93 | -9.07 | -3.59 | -1.85 | I3-->I4 |
| Ir_24_17 | -5.41 | 0.26 | -10.41 | -3.24 | -8.12 | -3.82 | -0.26 | I3-->I4 |
| Ir_24_18 | -8.98 | 3.13 | -12.40 | -3.21 | -8.78 | -0.50 | -3.13 | I3-->I4 |
| Ir_24_19 | -7.12 | 1.65 | -11.35 | -1.91 | -8.76 | -3.25 | -1.65 | I3-->I4 |
| Ir_24_20 | -3.20 | -1.85 | -7.65 | -4.98 | -7.68 | -5.38 | 1.85 | I3-->I4 |
| Ir_24_21 | -0.23 | -4.94 | -6.33 | -6.92 | -8.10 | -4.22 | 0.23 | I2-->I3 |
| Ir_24_22 | 3.19 | -8.64 | -1.28 | -10.56 | -5.98 | -7.47 | -3.19 | I2-->I3 |
| Ir_24_23 | -1.92 | -3.04 | -10.12 | -4.48 | -9.74 | -1.43 | 1.43 | I7-->I2 |
| Ir_24_24 | 1.86 | -7.95 | -4.73 | -5.47 | -9.65 | -4.80 | -1.86 | I2-->I3 |
| Ir_24_25 | -1.47 | -2.14 | -10.81 | -4.96 | -7.16 | -4.21 | 1.47 | I2-->I3 |
| Ir_24_26 | -4.62 | 0.64 | -11.23 | -2.22 | -8.94 | -4.38 | -0.64 | I3-->I4 |
| Ir_24_27 | 0.10 | -5.77 | -5.10 | -8.12 | -7.17 | -4.68 | -0.10 | I2-->I3 |
| Ir_24_28 | -1.28 | -4.32 | -6.30 | -7.53 | -7.83 | -3.48 | 1.28 | I2-->I3 |
| Ir_25_0 | -7.82 | 4.35 | -17.63 | -3.14 | -8.11 | 1.60 | -4.35 | I3-->I4 |
| Ir_25_1 | -3.75 | -0.02 | -12.35 | -5.85 | -7.66 | -1.11 | 0.02 | I3-->I4 |
| Ir_25_2 | -2.19 | -2.61 | -9.51 | -7.84 | -4.98 | -3.61 | 2.19 | I2-->I3 |
| Ir_25_3 | 0.91 | -4.63 | -6.57 | -8.28 | -5.92 | -6.25 | -0.91 | I2-->I3 |
| Ir_25_4 | -8.53 | 4.75 | -16.82 | -0.84 | -9.49 | 0.19 | -4.75 | I3-->I4 |
| Ir_25_5 | -6.45 | 3.27 | -15.02 | -2.57 | -9.05 | -0.93 | -3.27 | I3-->I4 |
| Ir_25_6 | -5.65 | 2.09 | -15.99 | 0.49 | -11.41 | -0.28 | -2.09 | I3-->I4 |
| Ir_25_8 | -7.07 | 4.96 | -19.28 | 0.61 | -8.06 | -1.89 | -4.96 | I3-->I4 |
| Ir_25_9 | -6.52 | 3.64 | -16.91 | -2.16 | -7.45 | -1.34 | -3.64 | I3-->I4 |
| Ir_25_10 | -7.38 | 3.77 | -16.49 | -0.77 | -8.37 | -1.50 | -3.77 | I3-->I4 |
| Ir_25_11 | -7.87 | 4.48 | -16.91 | -0.90 | -7.52 | -2.02 | -4.48 | I3-->I4 |
| Ir_25_12 | -6.39 | 3.58 | -16.93 | -0.94 | -7.51 | -2.55 | -3.58 | I3-->I4 |
| Ir_25_13 | -1.03 | -1.25 | -10.39 | -5.54 | -4.68 | -7.86 | 1.03 | I2-->I3 |
| Ir_25_14 | -6.68 | 3.70 | -16.75 | -0.87 | -7.95 | -2.20 | -3.70 | I3-->I4 |
| Ir_25_16 | -8.55 | 5.72 | -16.53 | -0.67 | -8.46 | -2.25 | -5.72 | I3-->I4 |
| Ir_25_17 | -8.79 | 5.59 | -16.04 | -1.08 | -8.36 | -2.06 | -5.59 | I3-->I4 |
| Ir_25_18 | -8.71 | 4.90 | -14.50 | -1.74 | -8.28 | -2.41 | -4.90 | I3-->I4 |
| Ir_25_19 | -8.28 | 4.54 | -14.98 | -0.21 | -8.18 | -3.62 | -4.54 | I3-->I4 |
| Ir_25_20 | -5.42 | 1.41 | -11.91 | -1.96 | -8.43 | -4.42 | -1.41 | I3-->I4 |
| Ir_25_21 | -2.62 | -1.25 | -10.17 | -7.85 | -5.26 | -3.60 | 1.25 | I3-->I4 |
| Ir_25_22 | 1.55 | -5.07 | -5.82 | -9.20 | -5.20 | -7.01 | -1.55 | I2-->I3 |
| Ir_25_23 | -2.90 | -1.15 | -11.44 | -5.60 | -7.26 | -2.40 | 1.15 | I3-->I4 |
| Ir_25_24 | 0.62 | -5.96 | -6.28 | -6.45 | -7.22 | -5.45 | -0.62 | I2-->I3 |
| Ir_25_25 | -3.29 | 1.12 | -14.77 | -3.23 | -6.61 | -3.97 | -1.12 | I3-->I4 |
| Ir_25_26 | -8.43 | 5.41 | -15.80 | -1.16 | -8.50 | -2.25 | -5.41 | I3-->I4 |
| Ir_25_27 | -1.83 | -2.33 | -8.98 | -6.76 | -6.26 | -4.58 | 1.83 | I2-->I3 |
| Ir_25_28 | -1.03 | -4.31 | -5.90 | -7.66 | -5.62 | -6.23 | 1.03 | I2-->I3 |
| Ir_26_0 | -9.51 | 4.99 | -16.94 | -1.03 | -10.71 | 2.47 | -4.99 | I3-->I4 |
| Ir_26_1 | -5.19 | 1.15 | -12.63 | -3.28 | -10.83 | 0.05 | -1.15 | I3-->I4 |
| Ir_26_2 | -3.28 | -2.00 | -7.72 | -6.44 | -8.90 | -2.39 | 2.00 | I3-->I4 |
| Ir_26_3 | -0.29 | -3.54 | -5.67 | -6.01 | -10.34 | -4.88 | 0.29 | I2-->I3 |
| Ir_26_4 | -10.78 | 6.05 | -17.57 | -0.03 | -6.96 | -1.44 | -6.05 | I3-->I4 |
| Ir_26_5 | -5.70 | 1.91 | -13.59 | -1.12 | -8.23 | -4.01 | -1.91 | I3-->I4 |
| Ir_26_6 | -5.53 | 0.86 | -14.17 | 0.23 | -8.40 | -3.73 | -0.86 | I3-->I4 |
| Ir_26_7 | 7.69 | -11.27 | 0.94 | -10.67 | -7.40 | -10.04 | -7.69 | I2-->I3 |
| Ir_26_8 | -8.74 | 5.45 | -17.82 | 1.00 | -9.72 | -0.92 | -5.45 | I3-->I4 |
| Ir_26_9 | -8.87 | 5.13 | -17.14 | 0.21 | -9.97 | -0.10 | -5.13 | I3-->I4 |
| Ir_26_10 | -9.35 | 4.89 | -15.34 | -1.39 | -9.41 | -0.14 | -4.89 | I3-->I4 |

| | | | | | | | | |
|----------|--------|-------|--------|--------|--------|-------|--------|--------|
| Ir_26_11 | -9.70 | 5.56 | -17.32 | 0.98 | -9.35 | -0.90 | -5.56 | I3->I4 |
| Ir_26_12 | -9.78 | 6.65 | -18.57 | 1.13 | -9.97 | -0.20 | -6.65 | I3->I4 |
| Ir_26_13 | -3.02 | -0.46 | -8.89 | -5.02 | -6.88 | -6.48 | 0.46 | I3->I4 |
| Ir_26_14 | -7.37 | 4.38 | -16.67 | 1.10 | -10.13 | -2.05 | -4.38 | I3->I4 |
| Ir_26_16 | -11.74 | 9.92 | -21.77 | 2.93 | -8.00 | -2.08 | -9.92 | I3->I4 |
| Ir_26_17 | -9.00 | 4.71 | -15.54 | 0.30 | -6.31 | -4.90 | -4.71 | I3->I4 |
| Ir_26_18 | -11.95 | 7.86 | -18.72 | 1.05 | -7.13 | -1.86 | -7.86 | I3->I4 |
| Ir_26_19 | -13.07 | 10.44 | -21.42 | 2.28 | -6.70 | -2.27 | -10.44 | I3->I4 |
| Ir_26_20 | -6.63 | 2.18 | -13.29 | -0.43 | -6.31 | -6.26 | -2.18 | I3->I4 |
| Ir_26_21 | -4.46 | 0.43 | -10.91 | -5.52 | -8.74 | -1.54 | -0.43 | I3->I4 |
| Ir_26_22 | -0.65 | -4.25 | -4.63 | -8.76 | -6.73 | -5.73 | 0.65 | I2->I3 |
| Ir_26_23 | -4.48 | 0.00 | -10.48 | -5.30 | -9.76 | -0.72 | 0.00 | I3->I4 |
| Ir_26_24 | -1.40 | -4.46 | -7.12 | -3.60 | -11.15 | -3.02 | 1.40 | I2->I3 |
| Ir_26_26 | -11.45 | 9.07 | -20.46 | 1.32 | -6.37 | -2.86 | -9.07 | I3->I4 |
| Ir_26_27 | -4.92 | 0.07 | -9.06 | -6.02 | -8.28 | -2.54 | -0.07 | I3->I4 |
| Ir_26_28 | -3.50 | -2.08 | -5.63 | -8.24 | -7.69 | -3.60 | 2.08 | I3->I4 |
| Ir_27_0 | -7.11 | 2.01 | -14.73 | -3.59 | -8.97 | 1.66 | -2.01 | I3->I4 |
| Ir_27_1 | -3.45 | -0.66 | -11.38 | -5.59 | -8.81 | -0.85 | 0.66 | I3->I4 |
| Ir_27_2 | -0.99 | -4.53 | -6.76 | -8.20 | -6.80 | -3.46 | 0.99 | I2->I3 |
| Ir_27_3 | 2.01 | -6.44 | -3.39 | -9.47 | -6.99 | -6.46 | -2.01 | I2->I3 |
| Ir_27_4 | -8.21 | 3.96 | -15.30 | -1.67 | -9.56 | 0.04 | -3.96 | I3->I4 |
| Ir_27_5 | -4.80 | 0.79 | -12.13 | -4.05 | -9.35 | -1.21 | -0.79 | I3->I4 |
| Ir_27_6 | -4.74 | 0.49 | -13.48 | -1.28 | -11.34 | -0.39 | -0.49 | I3->I4 |
| Ir_27_9 | -5.26 | 1.43 | -14.31 | -3.10 | -6.88 | -2.63 | -1.43 | I3->I4 |
| Ir_27_10 | -6.05 | 1.33 | -11.89 | -4.02 | -7.76 | -2.35 | -1.33 | I3->I4 |
| Ir_27_11 | -6.60 | 1.70 | -12.86 | -3.21 | -6.64 | -3.14 | -1.70 | I3->I4 |
| Ir_27_12 | -4.77 | 0.38 | -12.07 | -2.97 | -7.35 | -3.96 | -0.38 | I3->I4 |
| Ir_27_13 | -2.07 | -1.35 | -9.04 | -7.66 | -4.06 | -6.56 | 1.35 | I3->I4 |
| Ir_27_14 | -4.37 | 0.23 | -11.80 | -3.35 | -7.19 | -4.26 | -0.23 | I3->I4 |
| Ir_27_16 | -7.63 | 3.62 | -13.29 | -3.46 | -8.29 | -1.69 | -3.62 | I3->I4 |
| Ir_27_17 | -8.14 | 3.57 | -13.30 | -2.60 | -8.46 | -1.82 | -3.57 | I3->I4 |
| Ir_27_18 | -9.32 | 4.38 | -13.81 | -2.05 | -8.79 | -1.14 | -4.38 | I3->I4 |
| Ir_27_19 | -7.79 | 2.60 | -11.77 | -3.40 | -7.46 | -2.91 | -2.60 | I3->I4 |
| Ir_27_20 | -6.35 | 2.53 | -11.47 | -3.30 | -8.68 | -3.47 | -2.53 | I3->I4 |
| Ir_27_21 | -2.47 | -1.74 | -10.19 | -6.34 | -7.12 | -2.88 | 1.74 | I3->I4 |
| Ir_27_22 | 2.00 | -6.40 | -3.52 | -10.36 | -5.13 | -7.32 | -2.00 | I2->I3 |
| Ir_27_23 | -2.01 | -2.74 | -8.88 | -7.08 | -7.76 | -2.27 | 2.01 | I2->I3 |
| Ir_27_24 | 0.28 | -6.38 | -5.95 | -6.32 | -8.48 | -3.89 | -0.28 | I2->I3 |
| Ir_27_25 | -1.84 | -1.99 | -10.52 | -6.20 | -5.24 | -4.95 | 1.84 | I2->I3 |
| Ir_27_26 | -6.62 | 2.46 | -11.41 | -3.91 | -7.85 | -3.42 | -2.46 | I3->I4 |
| Ir_27_27 | -1.40 | -3.17 | -7.78 | -7.20 | -6.64 | -4.55 | 1.40 | I2->I3 |
| Ir_27_28 | -1.97 | -3.41 | -6.58 | -7.81 | -7.17 | -3.80 | 1.97 | I2->I3 |
| Ir_28_0 | -7.49 | 2.22 | -14.85 | -3.08 | -9.43 | 1.90 | -2.22 | I3->I4 |
| Ir_28_1 | -3.20 | -1.36 | -10.47 | -6.16 | -8.60 | -0.95 | 0.95 | I7->I2 |
| Ir_28_2 | -1.90 | -3.61 | -7.90 | -8.28 | -6.47 | -2.57 | 1.90 | I2->I3 |
| Ir_28_3 | 0.35 | -4.90 | -4.64 | -9.53 | -6.86 | -5.16 | -0.35 | I2->I3 |
| Ir_28_4 | -8.19 | 3.80 | -14.85 | -2.02 | -9.61 | 0.12 | -3.80 | I3->I4 |
| Ir_28_5 | -3.92 | -0.68 | -9.20 | -4.79 | -9.10 | -3.04 | 0.68 | I3->I4 |
| Ir_28_6 | -3.15 | -1.44 | -11.04 | -1.62 | -11.63 | -1.86 | 1.44 | I3->I4 |
| Ir_28_8 | -5.37 | 1.33 | -13.04 | -3.20 | -7.40 | -3.06 | -1.33 | I3->I4 |
| Ir_28_9 | -5.50 | 0.52 | -10.93 | -6.05 | -6.31 | -2.46 | -0.52 | I3->I4 |
| Ir_28_10 | -6.63 | 1.51 | -12.77 | -2.87 | -8.66 | -1.32 | -1.51 | I3->I4 |
| Ir_28_11 | -7.10 | 2.07 | -13.73 | -2.29 | -7.22 | -2.47 | -2.07 | I3->I4 |
| Ir_28_12 | -5.75 | 1.18 | -12.54 | -3.66 | -7.13 | -2.84 | -1.18 | I3->I4 |
| Ir_28_13 | -0.64 | -3.33 | -7.07 | -7.37 | -4.31 | -8.02 | 0.64 | I2->I3 |
| Ir_28_14 | -4.51 | 0.14 | -11.71 | -3.42 | -6.87 | -4.36 | -0.14 | I3->I4 |
| Ir_28_16 | -8.31 | 4.47 | -13.49 | -3.37 | -8.39 | -1.65 | -4.47 | I3->I4 |
| Ir_28_17 | -6.67 | 2.56 | -12.11 | -3.50 | -7.16 | -3.85 | -2.56 | I3->I4 |
| Ir_28_18 | -8.31 | 3.68 | -13.09 | -2.72 | -8.64 | -1.66 | -3.68 | I3->I4 |
| Ir_28_19 | -7.29 | 3.03 | -12.64 | -2.30 | -8.66 | -2.88 | -3.03 | I3->I4 |

| | | | | | | | | |
|----------|-------|-------|--------|--------|-------|-------|-------|---------|
| Ir_28_20 | -5.61 | 1.08 | -10.61 | -4.09 | -7.59 | -3.91 | -1.08 | I3-->I4 |
| Ir_28_21 | -2.53 | -2.34 | -8.16 | -8.37 | -6.75 | -2.59 | 2.34 | I3-->I4 |
| Ir_28_22 | 0.97 | -6.13 | -2.72 | -11.87 | -4.55 | -6.43 | -0.97 | I2-->I3 |
| Ir_28_23 | -2.76 | -2.19 | -9.49 | -6.10 | -8.51 | -1.68 | 1.68 | I7-->I2 |
| Ir_28_24 | 0.56 | -6.75 | -4.74 | -6.68 | -8.57 | -4.56 | -0.56 | I2-->I3 |
| Ir_28_25 | -2.64 | -0.70 | -11.58 | -5.71 | -6.04 | -4.07 | 0.70 | I3-->I4 |
| Ir_28_26 | -6.07 | 1.90 | -11.45 | -3.34 | -8.31 | -3.46 | -1.90 | I3-->I4 |
| Ir_28_27 | -1.73 | -3.39 | -7.10 | -8.34 | -6.40 | -3.77 | 1.73 | I2-->I3 |
| Ir_28_28 | -2.46 | -3.07 | -6.60 | -7.78 | -7.47 | -3.36 | 2.46 | I2-->I3 |

References

- 1 B. Huang and O. A. von Lilienfeld, *J. Chem. Phys.*, 2016, **145**, 161102.
- 2 M. Rupp, A. Tkatchenko, K.-R. Müller and O. A. von Lilienfeld, *Phys. Rev. Lett.*, 2012, **108**, 058301.
- 3 K. Hansen, F. Biegler, R. Ramakrishnan, W. Pronobis, O. A. von Lilienfeld, K.-R. Müller and A. Tkatchenko, *J. Phys. Chem. Lett.*, 2015, **6**, 2326–2331.
- 4 F. A. Faber, A. S. Christensen, B. Huang and O. A. von Lilienfeld, *J. Chem. Phys.*, 2018, **148**, 241717.
- 5 B. Meyer, B. Sawatlon, S. Heinen, O. A. von Lilienfeld and C. Corminboeuf, *Chem. Sci.*, 2018, **9**, 7069–7077.