The Supporting Information

# The CO–Ne van der Waals complex: *ab initio* intermolecular potential energy, interaction induced electric dipole moment and polarizability surfaces, and second virial coefficients

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TABLE I: CO–Ne interaction dipole moment basis set convergence study. $R$ values in Å, $\theta$ in °, and interaction dipole moment values in au.

| | $\Delta\mu_{x'} \times 10^3$ | | $\Delta\mu_{z'} \times 10^3$ | |
|---|---|---|---|---|
| | aug-cc-pV$X$Z-33211 | d-aug-cc-pV$X$Z-33211 | aug-cc-pV$X$Z-3 3211 | d-aug-cc-pV$X$Z-33211 |
| | | $R$=3.355, $\theta$=92.2 | | |
| $X$=T | 0.7356 | 0.7463 | 5.3578 | 5.4894 |
| $X$=Q | 0.7852 | 0.7963 | 5.4661 | 5.5112 |
| | | $R$=3.000, $\theta$=92.2 | | |
| $X$=T | 1.4686 | 1.4816 | 11.8006 | 11.9358 |
| $X$=Q | 1.5206 | 1.5382 | 11.8386 | 11.8847 |
| | | $R$=6.000, $\theta$=92.2 | | |
| $X$=T | −0.0089 | −0.0118 | 0.3296 | 0.3319 |
| $X$=Q | −0.0023 | −0.0026 | 0.3234 | 0.3265 |

TABLE II: CO–Ne static electric dipole polarizability and Cauchy moment basis set selection $R$ values in Å, $\theta$ in °, and the static electric dipole polarizability and Cauchy moment values in au.

| | $\Delta\alpha_{ave}(R,\theta) \times 10^2$ | | $\Delta S(-4)_{ave}(R,\theta) \times 10^2$ | |
|---|---|---|---|---|
| | aug-cc-pV$X$Z-33211 | d-aug-cc-pV$X$Z-33211 | aug-cc-pV$X$Z-33211 | d-aug-cc-pV$X$Z-33211 |
| | | $R$=3.355, $\theta$=92.2 | | |
| $X$=T | −3.932 | −4.322 | −28.713 | −31.450 |
| $X$=Q | −4.093 | −4.169 | −29.033 | −29.933 |
| | | $R$=3.000, $\theta$=92.2 | | |
| $X$=T | −8.681 | −9.103 | −60.823 | −63.797 |
| $X$=Q | −8.777 | −8.841 | −60.439 | −61.311 |
| | | $R$=6.000, $\theta$=92.2 | | |
| $X$=T | −0.248 | −0.345 | 0.590 | −0.083 |
| $X$=Q | −0.319 | −0.349 | 0.200 | −0.103 |

TABLE III: CO–Ne interaction induced energies evaluated with the CCSD(T) method and the d-aug-cc-pVTZ-33211 basis set. $R$ values in Å, $\theta$ in °, and energy values in $cm^{-1}$. See the text for details.

| R [Å] | $\theta$ [°] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0.0 | 20.0 | 40.0 | 60.0 | 80.0 | 100.0 | 120.0 | 140.0 | 160.0 | 180.0 |
| 2.20 | 16310.670 | 13632.070 | 8562.292 | 4848.532 | 3216.475 | 3431.050 | 6464.548 | 15138.227 | 30415.861 | 40265.513 |
| 2.30 | 10596.381 | 8870.258 | 5567.400 | 3131.142 | 2073.783 | 2283.404 | 4542.406 | 10978.372 | 22099.189 | 29018.710 |
| 2.50 | 4369.925 | 3655.624 | 2270.940 | 1243.529 | 810.645 | 959.730 | 2159.249 | 5559.085 | 11248.976 | 14624.553 |
| 2.75 | 1346.903 | 1114.329 | 661.459 | 328.135 | 194.609 | 269.411 | 776.207 | 2220.090 | 4579.481 | 5932.341 |
| 3.00 | 348.729 | 276.360 | 137.092 | 37.888 | 1.203 | 32.038 | 229.210 | 808.003 | 1749.471 | 2279.964 |
| 3.15 | 122.679 | 88.213 | 23.198 | −21.054 | −36.184 | −20.032 | 86.138 | 410.255 | 941.882 | 1240.453 |
| 3.25 | 43.563 | 23.152 | −14.452 | −38.686 | −46.306 | −36.579 | 31.464 | 248.014 | 607.421 | 809.462 |
| 3.40 | −16.771 | −25.371 | −40.165 | −48.095 | −49.929 | −46.305 | −13.955 | 100.331 | 296.023 | 406.785 |
| 3.50 | −34.626 | −39.000 | −45.776 | −48.181 | −48.217 | −47.011 | −28.925 | 43.342 | 171.446 | 244.630 |
| 3.60 | −42.589 | −44.423 | −46.487 | −45.791 | −44.919 | −45.249 | −36.462 | 7.479 | 89.639 | 137.277 |
| 3.75 | −44.448 | −44.315 | −42.890 | −40.116 | −38.767 | −40.330 | −39.472 | −21.172 | 18.679 | 42.691 |
| 3.85 | −42.282 | −41.538 | −39.128 | −35.910 | −34.538 | −36.476 | −38.382 | −29.916 | −6.804 | 7.763 |
| 4.00 | −37.006 | −35.890 | −33.026 | −29.823 | −28.594 | −30.709 | −34.609 | −34.397 | −26.080 | −20.006 |
| 4.10 | −33.062 | −31.909 | −29.110 | −26.142 | −25.053 | −27.133 | −31.507 | −34.089 | −31.292 | −28.466 |
| 4.25 | −27.323 | −26.278 | −23.825 | −21.333 | −20.457 | −22.363 | −26.768 | −31.246 | −32.910 | −32.793 |
| 4.35 | −23.841 | −22.923 | −20.766 | −18.604 | −17.856 | −19.607 | −23.788 | −28.636 | −31.692 | −32.468 |
| 4.50 | −19.296 | −18.586 | −16.870 | −15.161 | −14.576 | −16.078 | −19.770 | −24.501 | −28.315 | −29.639 |
| 5.00 | −9.666 | −9.354 | −8.599 | −7.830 | −7.589 | −8.399 | −10.428 | −13.319 | −16.047 | −17.111 |
| 6.00 | −2.858 | −2.765 | −2.577 | −2.410 | −2.391 | −2.620 | −3.125 | −3.806 | −4.431 | −4.694 |
| 7.00 | −1.041 | −1.017 | −0.963 | −0.915 | −0.912 | −0.987 | −1.139 | −1.334 | −1.501 | −1.567 |
| 10.00 | −0.113 | −0.112 | −0.107 | −0.103 | −0.102 | −0.108 | −0.119 | −0.134 | −0.145 | −0.150 |
| 15.00 | −0.010 | −0.010 | −0.009 | −0.009 | −0.009 | −0.009 | −0.010 | −0.011 | −0.011 | −0.012 |
| 20.00 | −0.002 | −0.002 | −0.002 | −0.002 | −0.002 | −0.002 | −0.002 | −0.002 | −0.002 | −0.002 |

TABLE IV: CO–Ne interaction induced dipole moment $x'$-components evaluated with the CCSD method and the d-aug-cc-pVTZ-33211 basis set. $R$ values in Å, $\theta$ in °, and dipole moment values in au. See the text for details.

| | $\Delta\mu_{x'} \times 10^3$ | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| R [Å] | $\theta$ [°] | | | | | | | | | |
| | 0.0 | 20.0 | 40.0 | 60.0 | 80.0 | 100.0 | 120.0 | 140.0 | 160.0 | 180.0 |
| 2.20 | 76.2747 | 86.0037 | 80.4026 | 52.0204 | 24.1674 | −9.1132 | −82.2045 | −224.4778 | −383.6192 | −438.3663 |
| 2.30 | 54.2913 | 60.9372 | 58.2968 | 39.4547 | 19.3860 | −7.0190 | −65.9174 | −178.1162 | −302.8602 | −349.9192 |
| 2.50 | 26.1321 | 29.9714 | 30.7074 | 22.9491 | 12.5490 | −4.3229 | −42.4944 | −111.5896 | −186.3854 | −216.5582 |
| 2.75 | 8.5632 | 11.0759 | 13.5003 | 11.8729 | 7.3947 | −2.5078 | −24.5739 | −61.2292 | −98.6981 | −113.9273 |
| 3.00 | 0.9812 | 2.8524 | 5.6368 | 6.3293 | 4.4788 | −1.5500 | −14.2530 | −32.7316 | −49.5985 | −56.0839 |
| 3.15 | −1.1126 | 0.4913 | 3.2018 | 4.4409 | 3.3783 | −1.2002 | −10.3331 | −22.1474 | −31.5882 | −34.8612 |
| 3.25 | −1.9162 | −0.4627 | 2.1388 | 3.5522 | 2.8257 | −1.0273 | −8.3732 | −16.9567 | −22.8621 | −24.6019 |
| 3.40 | −2.5496 | −1.2918 | 1.0990 | 2.6003 | 2.1943 | −0.8323 | −6.1624 | −11.2431 | −13.4165 | −13.5501 |
| 3.50 | −2.7176 | −1.5743 | 0.6609 | 2.1481 | 1.8731 | −0.7342 | −5.0616 | −8.4896 | −8.9714 | −8.3906 |
| 3.60 | −2.7547 | −1.7151 | 0.3615 | 1.7997 | 1.6119 | −0.6550 | −4.1884 | −6.3748 | −5.6430 | −4.5634 |
| 3.75 | −2.6577 | −1.7559 | 0.0884 | 1.4169 | 1.3055 | −0.5622 | −3.2031 | −4.1059 | −2.2213 | −0.6956 |
| 3.85 | −2.5346 | −1.7139 | −0.0158 | 1.2284 | 1.1445 | −0.5133 | −2.7097 | −3.0422 | −0.7149 | 0.9615 |
| 4.00 | −2.3105 | −1.5968 | −0.1003 | 1.0137 | 0.9507 | −0.4536 | −2.1464 | −1.9223 | 0.7357 | 2.4896 |
| 4.10 | −2.1519 | −1.5005 | −0.1261 | 0.9035 | 0.8461 | −0.4207 | −1.8594 | −1.4073 | 1.3165 | 3.0545 |
| 4.25 | −1.9167 | −1.3475 | −0.1377 | 0.7726 | 0.7170 | −0.3789 | −1.5246 | −0.8745 | 1.8016 | 3.4538 |
| 4.35 | −1.7671 | −1.2460 | −0.1346 | 0.7024 | 0.6457 | −0.3549 | −1.3497 | −0.6339 | 1.9485 | 3.5187 |
| 4.50 | −1.5582 | −1.1008 | −0.1214 | 0.6158 | 0.5560 | −0.3235 | −1.1404 | −0.3895 | 2.0021 | 3.4317 |
| 5.00 | −1.0152 | −0.7125 | −0.0596 | 0.4245 | 0.3549 | −0.2444 | −0.7163 | −0.0843 | 1.5907 | 2.5566 |
| 6.00 | −0.4597 | −0.3119 | 0.0058 | 0.2293 | 0.1648 | −0.1465 | −0.3535 | −0.0267 | 0.7412 | 1.1679 |
| 7.00 | −0.2431 | −0.1618 | 0.0119 | 0.1292 | 0.0832 | −0.0908 | −0.1930 | −0.0119 | 0.3802 | 0.5922 |
| 10.00 | −0.0557 | −0.0356 | 0.0066 | 0.0322 | 0.0157 | −0.0277 | −0.0463 | 0.0015 | 0.0897 | 0.1351 |
| 15.00 | −0.0094 | −0.0055 | 0.0024 | 0.0064 | 0.0019 | −0.0069 | −0.0093 | 0.0014 | 0.0187 | 0.0272 |
| 20.00 | −0.0024 | −0.0012 | 0.0011 | 0.0020 | 0.0002 | −0.0026 | −0.0030 | 0.0008 | 0.0064 | 0.0091 |

TABLE V: CO–Ne interaction induced dipole moment $z'$-components evaluated with the CCSD method and the d-aug-cc-pVTZ-33211 basis set. $R$ values in Å, $\theta$ in °, and dipole moment values in au. See the text for details.

| | $\Delta\mu_{z'} \times 10^3$ | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| R [Å] | $\theta$ [°] | | | | | | | | | |
| | 0.0 | 20.0 | 40.0 | 60.0 | 80.0 | 100.0 | 120.0 | 140.0 | 160.0 | 180.0 |
| 2.20 | 0.0000 | 13.8170 | 31.4129 | 38.3048 | 51.1240 | 101.8488 | 207.7941 | 329.8573 | 313.7426 | 0.0000 |
| 2.30 | 0.0000 | 8.2895 | 21.1519 | 28.4136 | 40.5000 | 80.3836 | 159.9171 | 246.2609 | 223.9393 | 0.0000 |
| 2.50 | 0.0000 | 2.1096 | 8.9521 | 15.4285 | 25.3313 | 49.9326 | 93.9762 | 136.0140 | 115.1970 | 0.0000 |
| 2.75 | 0.0000 | −0.9995 | 1.9763 | 6.7893 | 13.9778 | 27.4108 | 47.5586 | 63.3244 | 49.9824 | 0.0000 |
| 3.00 | 0.0000 | −1.9394 | −0.7851 | 2.6164 | 7.7082 | 15.0692 | 23.5141 | 27.9572 | 20.3211 | 0.0000 |
| 3.15 | 0.0000 | −2.0533 | −1.4725 | 1.2883 | 5.4347 | 10.5898 | 15.1965 | 16.3007 | 10.9269 | 0.0000 |
| 3.25 | 0.0000 | −2.0351 | −1.7055 | 0.7061 | 4.3334 | 8.4120 | 11.2806 | 10.9849 | 6.7387 | 0.0000 |
| 3.40 | 0.0000 | −1.9284 | −1.8428 | 0.1421 | 3.1293 | 6.0193 | 7.1269 | 5.5420 | 2.5506 | 0.0000 |
| 3.50 | 0.0000 | −1.8274 | −1.8426 | −0.0885 | 2.5490 | 4.8592 | 5.1979 | 3.1259 | 0.7468 | 0.0000 |
| 3.60 | 0.0000 | −1.7150 | −1.7967 | −0.2388 | 2.0998 | 3.9570 | 3.7574 | 1.4011 | −0.5013 | 0.0000 |
| 3.75 | 0.0000 | −1.5398 | −1.6777 | −0.3611 | 1.6070 | 2.9622 | 2.2625 | −0.2616 | −1.6388 | 0.0000 |
| 3.85 | 0.0000 | −1.4252 | −1.5808 | −0.3967 | 1.3666 | 2.4750 | 1.5854 | −0.9361 | −2.0567 | 0.0000 |
| 4.00 | 0.0000 | −1.2628 | −1.4270 | −0.4082 | 1.0980 | 1.9298 | 0.8958 | −1.5189 | −2.3532 | 0.0000 |
| 4.10 | 0.0000 | −1.1628 | −1.3248 | −0.3983 | 0.9636 | 1.6572 | 0.5897 | −1.7124 | −2.4041 | 0.0000 |
| 4.25 | 0.0000 | −1.0259 | −1.1782 | −0.3691 | 0.8090 | 1.3447 | 0.2846 | −1.8185 | −2.3478 | 0.0000 |
| 4.35 | 0.0000 | −0.9434 | −1.0868 | −0.3445 | 0.7292 | 1.1842 | 0.1529 | −1.8100 | −2.2563 | 0.0000 |
| 4.50 | 0.0000 | −0.8319 | −0.9607 | −0.3048 | 0.6342 | 0.9950 | 0.0262 | −1.7285 | −2.0778 | 0.0000 |
| 5.00 | 0.0000 | −0.5524 | −0.6350 | −0.1842 | 0.4390 | 0.6220 | −0.0992 | −1.2703 | −1.4366 | 0.0000 |
| 6.00 | 0.0000 | −0.2647 | −0.2951 | −0.0588 | 0.2471 | 0.3071 | −0.0671 | −0.6045 | −0.6532 | 0.0000 |
| 7.00 | 0.0000 | −0.1433 | −0.1562 | −0.0218 | 0.1436 | 0.1636 | −0.0463 | −0.3219 | −0.3353 | 0.0000 |
| 10.00 | 0.0000 | −0.0339 | −0.0348 | 0.0003 | 0.0384 | 0.0359 | −0.0189 | −0.0796 | −0.0767 | 0.0000 |
| 15.00 | 0.0000 | −0.0061 | −0.0055 | 0.0018 | 0.0086 | 0.0064 | −0.0056 | −0.0169 | −0.0153 | 0.0000 |
| 20.00 | 0.0000 | −0.0017 | −0.0013 | 0.0011 | 0.0030 | 0.0018 | −0.0023 | −0.0058 | −0.0051 | 0.0000 |

TABLE VI: CO–Ne static interaction induced dipole polarizability evaluated with the CCSD method and the d-aug-cc-pVTZ-33211 basis set. $R$ values in Å, $\theta$ in °, and polarizability values in au. See the text for details.

| | $\Delta\alpha(R,\theta) \times 10^3$ | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| R [Å] | $\theta$ [°] | | | | | | | | | |
| | 0.0 | 20.0 | 40.0 | 60.0 | 80.0 | 100.0 | 120.0 | 140.0 | 160.0 | 180.0 |
| 2.20 | −115.4613 | −98.3988 | −147.0608 | −260.9449 | −341.4797 | −327.7186 | −161.7697 | 335.0151 | 1501.5630 | 2515.3060 |
| 2.30 | −145.9609 | −132.5362 | −160.4494 | −240.1714 | −301.3699 | −299.0246 | −201.2248 | 88.3362 | 689.1333 | 1129.3098 |
| 2.50 | −128.5488 | −121.5218 | −135.3135 | −181.8640 | −221.9057 | −231.9219 | −215.4974 | −163.8601 | −71.8917 | −23.2417 |
| 2.75 | −65.5073 | −64.8912 | −78.8583 | −112.1496 | −140.6216 | −153.2192 | −172.5509 | −227.9482 | −316.5348 | −370.2214 |
| 3.00 | −11.6671 | −15.4014 | −32.9328 | −62.2806 | −84.8397 | −93.8324 | −114.4937 | −183.8708 | −294.2215 | −355.4088 |
| 3.15 | 10.1085 | 4.7815 | −14.1943 | −42.0646 | −62.0173 | −68.1440 | −83.6366 | −144.3420 | −243.2479 | −297.3384 |
| 3.25 | 20.4391 | 14.4171 | −5.0613 | −31.9308 | −50.3384 | −54.6478 | −66.0662 | −118.5230 | −206.3623 | −254.3504 |
| 3.40 | 30.7007 | 24.0852 | 4.4947 | −20.7326 | −37.0320 | −38.9716 | −44.4822 | −83.8162 | −153.8404 | −192.3972 |
| 3.50 | 34.7433 | 27.9699 | 8.6594 | −15.3808 | −30.3982 | −31.0473 | −33.1000 | −64.1701 | −122.7933 | −155.4235 |
| 3.60 | 37.0733 | 30.2863 | 11.4708 | −11.3320 | −25.1615 | −24.7584 | −23.8695 | −47.4826 | −95.6493 | −122.8709 |
| 3.75 | 38.2040 | 31.5920 | 13.8010 | −7.1090 | −19.3290 | −17.7618 | −13.4644 | −27.7170 | −62.4110 | −82.6599 |
| 3.85 | 37.8463 | 31.4396 | 14.4496 | −5.2093 | −16.4677 | −14.3655 | −8.4236 | −17.6781 | −44.9333 | −61.3106 |
| 4.00 | 36.2555 | 30.2352 | 14.5301 | −3.3166 | −13.2891 | −10.6776 | −3.0758 | −6.5434 | −24.8218 | −36.4786 |
| 4.10 | 34.7574 | 29.0237 | 14.1902 | −2.5108 | −11.7225 | −8.9276 | −0.6652 | −1.2701 | −14.8637 | −24.0201 |
| 4.25 | 32.1816 | 26.8929 | 13.3399 | −1.7563 | −9.9565 | −7.0599 | 1.6787 | 4.1517 | −4.0507 | −10.2744 |
| 4.35 | 30.3786 | 25.3848 | 12.6485 | −1.4591 | −9.0626 | −6.1837 | 2.6109 | 6.4809 | 0.9670 | −3.7585 |
| 4.50 | 27.6976 | 23.1298 | 11.5437 | −1.2043 | −8.0151 | −5.2485 | 3.3575 | 8.5792 | 6.0320 | 3.0085 |
| 5.00 | 20.0310 | 16.6584 | 8.1913 | −1.0069 | −5.8719 | −3.7702 | 3.1627 | 9.2606 | 10.9815 | 10.6755 |
| 6.00 | 11.0773 | 9.1448 | 4.3349 | −0.8526 | −3.6335 | −2.5976 | 1.2527 | 5.2381 | 7.4007 | 7.9210 |
| 7.00 | 6.6883 | 5.4939 | 2.5261 | −0.6713 | −2.4175 | −1.8795 | 0.3823 | 2.8701 | 4.4081 | 4.8588 |
| 10.00 | 2.1252 | 1.7328 | 0.7570 | −0.2982 | −0.8965 | −0.7710 | −0.0665 | 0.7937 | 1.4176 | 1.6341 |
| 15.00 | 0.6051 | 0.4936 | 0.2161 | −0.0866 | −0.2647 | −0.2400 | −0.0424 | 0.2198 | 0.4282 | 0.5057 |
| 20.00 | 0.2504 | 0.2045 | 0.0902 | −0.0353 | −0.1108 | −0.1029 | −0.0214 | 0.0912 | 0.1836 | 0.2188 |

TABLE VII: CO–Ne interaction Cauchy moments evaluated with the CCSD method and the d-aug-cc-pVTZ-33211 basis set. $R$ values in Å, $\theta$ in °, and polarizability values in au. See the text for details.

| | $\Delta S(-4)_{ave}(R,\theta) \times 10^2$ | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| R [Å] | $\theta$ [°] | | | | | | | | | |
| | 0.0 | 20.0 | 40.0 | 60.0 | 80.0 | 100.0 | 120.0 | 140.0 | 160.0 | 180.0 |
| 2.20 | 169.5300 | 130.9434 | 34.6874 | −58.3727 | −122.3038 | −125.3054 | 66.3545 | 910.5359 | 3641.0731 | 6709.6567 |
| 2.30 | 91.3709 | 61.8702 | −7.1688 | −75.0179 | −124.0725 | −136.0503 | −20.7663 | 510.3739 | 1976.9556 | 3310.4195 |
| 2.50 | 19.6256 | 1.2738 | −39.9232 | −80.6894 | −111.5788 | −131.3212 | −108.1808 | 72.2072 | 509.1612 | 817.8278 |
| 2.75 | −2.5778 | −13.9650 | −39.8852 | −65.6203 | −84.3496 | −102.5450 | −124.8680 | −121.8402 | −66.0034 | −26.7323 |
| 3.00 | 0.0054 | −8.0954 | −27.0417 | −45.8153 | −57.6643 | −69.5831 | −99.6809 | −150.8589 | −200.5026 | −222.5346 |
| 3.15 | 4.4218 | −2.5541 | −19.0609 | −35.3066 | −44.3836 | −52.2766 | −79.3052 | −137.1824 | −204.8735 | −237.0573 |
| 3.25 | 7.3184 | 0.9009 | −14.3585 | −29.2759 | −36.8828 | −42.3163 | −65.9913 | −123.0114 | −193.9842 | −228.3066 |
| 3.40 | 10.9782 | 5.2236 | −8.5046 | −21.7601 | −27.5936 | −29.8529 | −47.8682 | −99.3444 | −167.9953 | −201.8068 |
| 3.50 | 12.8236 | 7.4367 | −5.4154 | −17.7120 | −22.5953 | −23.1203 | −37.4161 | −83.7743 | −148.1475 | −180.2087 |
| 3.60 | 14.1777 | 9.1212 | −2.9297 | −14.3520 | −18.4369 | −17.5321 | −28.3858 | −69.2330 | −128.2430 | −157.9663 |
| 3.75 | 15.3689 | 10.7616 | −0.1858 | −10.4200 | −13.5434 | −11.0231 | −17.4361 | −50.1414 | −100.3537 | −126.0937 |
| 3.85 | 15.6882 | 11.3581 | 1.0956 | −8.4153 | −11.0288 | −7.7434 | −11.7269 | −39.4300 | −83.8252 | −106.8622 |
| 4.00 | 15.6182 | 11.6773 | 2.3769 | −6.1401 | −8.1469 | −4.1018 | −5.2170 | −26.3451 | −62.6342 | −81.8231 |
| 4.10 | 15.2966 | 11.5993 | 2.8987 | −5.0122 | −6.7011 | −2.3613 | −2.0350 | −19.4521 | −50.9125 | −67.7621 |
| 4.25 | 14.5375 | 11.1828 | 3.3201 | −3.7608 | −5.0749 | −0.5356 | 1.3539 | −11.4787 | −36.6626 | −50.4121 |
| 4.35 | 13.9118 | 10.7706 | 3.4255 | −3.1518 | −4.2706 | 0.2785 | 2.8776 | −7.4976 | −29.1364 | −41.1011 |
| 4.50 | 12.8807 | 10.0374 | 3.4081 | −2.4829 | −3.3720 | 1.0621 | 4.3366 | −3.1238 | −20.3297 | −30.0218 |
| 5.00 | 9.4663 | 7.4276 | 2.7070 | −1.4142 | −1.8864 | 1.6495 | 5.2112 | 2.8598 | −5.3944 | −10.3006 |
| 6.00 | 4.9836 | 3.8866 | 1.3662 | −0.8057 | −1.0389 | 0.8028 | 2.8362 | 2.5141 | −0.1864 | −1.8593 |
| 7.00 | 2.8057 | 2.1684 | 0.7065 | −0.5492 | −0.7023 | 0.2780 | 1.3428 | 1.2101 | −0.0671 | −0.8504 |
| 10.00 | 0.7560 | 0.5756 | 0.1610 | −0.1963 | −0.2562 | −0.0265 | 0.2253 | 0.2179 | −0.0224 | −0.1698 |
| 15.00 | 0.1838 | 0.1404 | 0.0405 | −0.0472 | −0.0677 | −0.0223 | 0.0341 | 0.0471 | 0.0187 | −0.0010 |
| 20.00 | 0.0689 | 0.0530 | 0.0162 | −0.0064 | −0.0263 | −0.0118 | 0.0073 | 0.0180 | 0.0143 | 0.0104 |