

Table S5 Sum of squared error (SE) using different objective functions for predicting exometabolic fluxes of *S.cerevisiae* at different uptake rates of glucose

| Uptake rates | $J = \sum_{i=1}^m \phi(v_i - z_i) + \ v\ _1$ | $J = \sum_{i=1}^m \phi(v_i - z_i)$ | $J = \ v - z\ _2$ | $J = \ v\ _1$ | $J = \ v - z\ _2 + \ v\ _1$ |
|--------------|--|------------------------------------|-------------------|---------------|-----------------------------|
| 16.5 | 0.5 | 14.8 | 14.8 | 13.8 | 3.1×10^3 |
| 11.0 | 1.2 | 17.9 | 18.9 | 15.2 | 3.2×10^3 |
| Average | 0.85 | 16.35 | 16.85 | 14.5 | 3.15×10^3 |