Supplemental Table S2:

High-order orthogonal iterations process.

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| --- |
| High-order orthogonal iterations |
| 1. Truncate the high-order singular value decomposition to get the initial values of :  ,  , .  2. :  2.1 Computed the high-order singular value decomposition of the matrix , and then selected the left singular vector corresponding to the  largest singular values, and used the standard orthogonal basis of this space as the column vector of .  2.2 Computed the high-order singular value decomposition of the matrix , and then selected the left singular vector corresponding to the  largest singular values, and used the standard orthogonal basis of this space as the column vector of .  2.3 Computed the high-order singular value decomposition of the matrix , and then selected the left singular vector corresponding to the  largest singular values, and used the standard orthogonal basis of this space as the column vector of .  3. Reach the maximum number of iterations  cutoff.  4.  ， ，  5. Calculate the core matrix . |