

Comprehensive Model Comparison

Method	Execution Time (s)	Peak Memory (GB)	Reconstruction Quality	Information Criterion	Factor Stability
SPARSEGFA	301.41	2.40	N/A*	N/A	N/A**
PCA	0.01	2.39	0.7590	N/A	N/A
ICA	0.01	2.44	0.5006	N/A	N/A
FA	0.06	2.44	0.7500	N/A	N/A
NMF	0.03	2.44	0.8279	N/A	N/A
KMEANS	0.21	2.44	0.6067	N/A	N/A**
CCA	0.08	2.44	0.6674	N/A	N/A**

* *sparseGFA*: CV reconstruction failed (computationally expensive due to MCMC)
** *sparseGFA*, CCA, K-means: Factor stability not computed (bootstrap too expensive or not applicable)