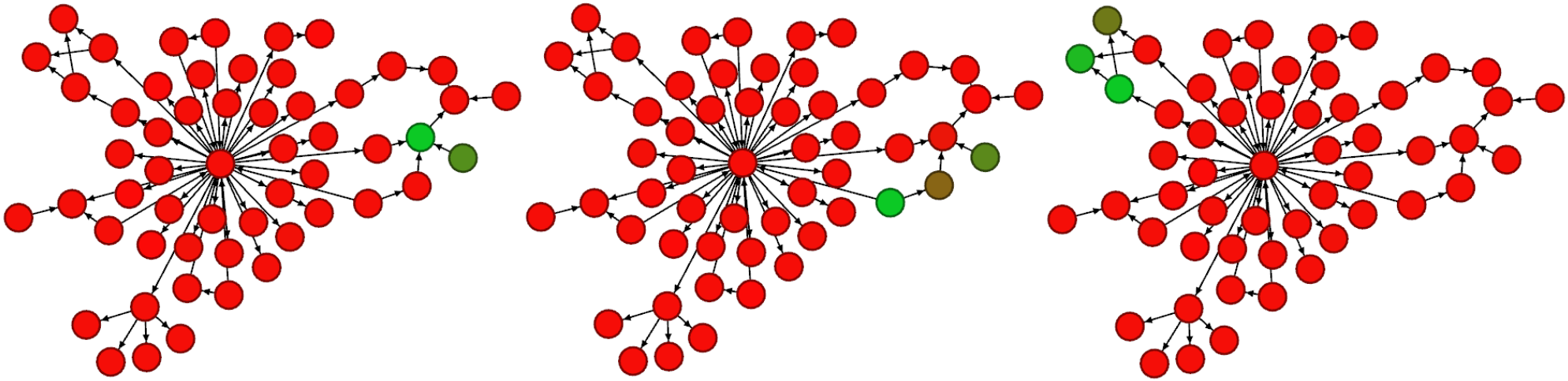
Information-geometric OMT methods in data analysis

April 19 2019

Feature network EMD for clustering



KEGG p53 signaling network

Wasserstein 1-metric distinguishes between near and far activity with respect to a network topology

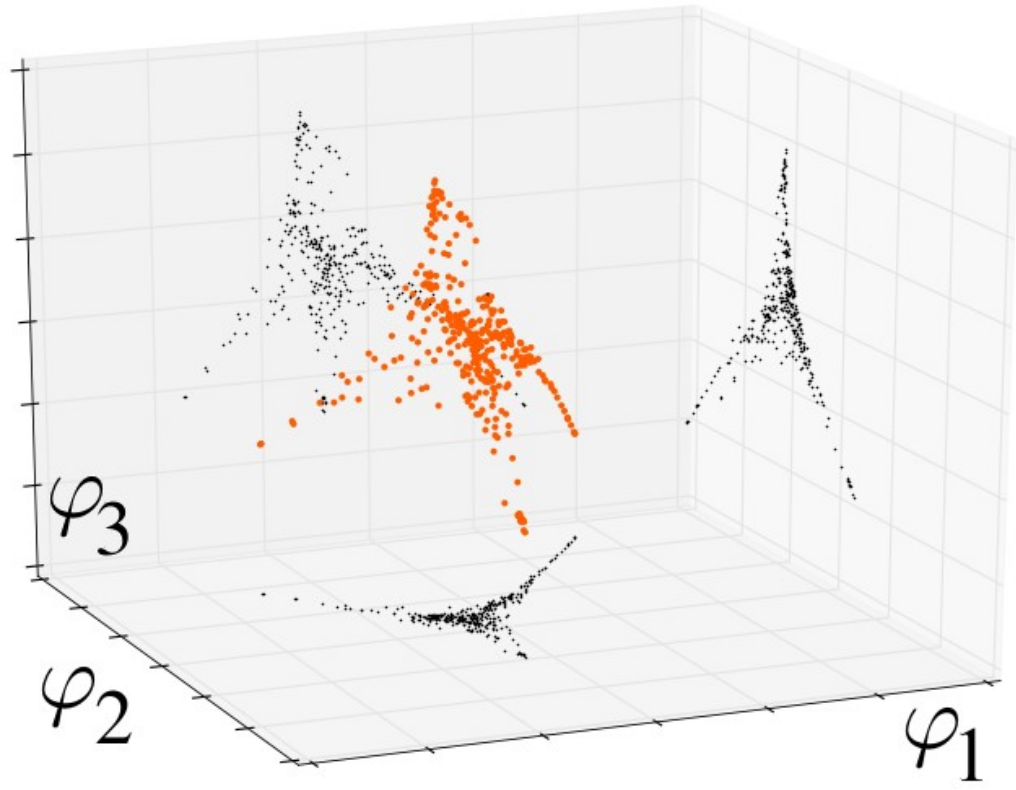
Feature network EMD for clustering

Global spectral analysis

$$W_{ij} = \exp\left(-\frac{d^2\left(s_i, s_j\right)}{\varepsilon}\right)$$

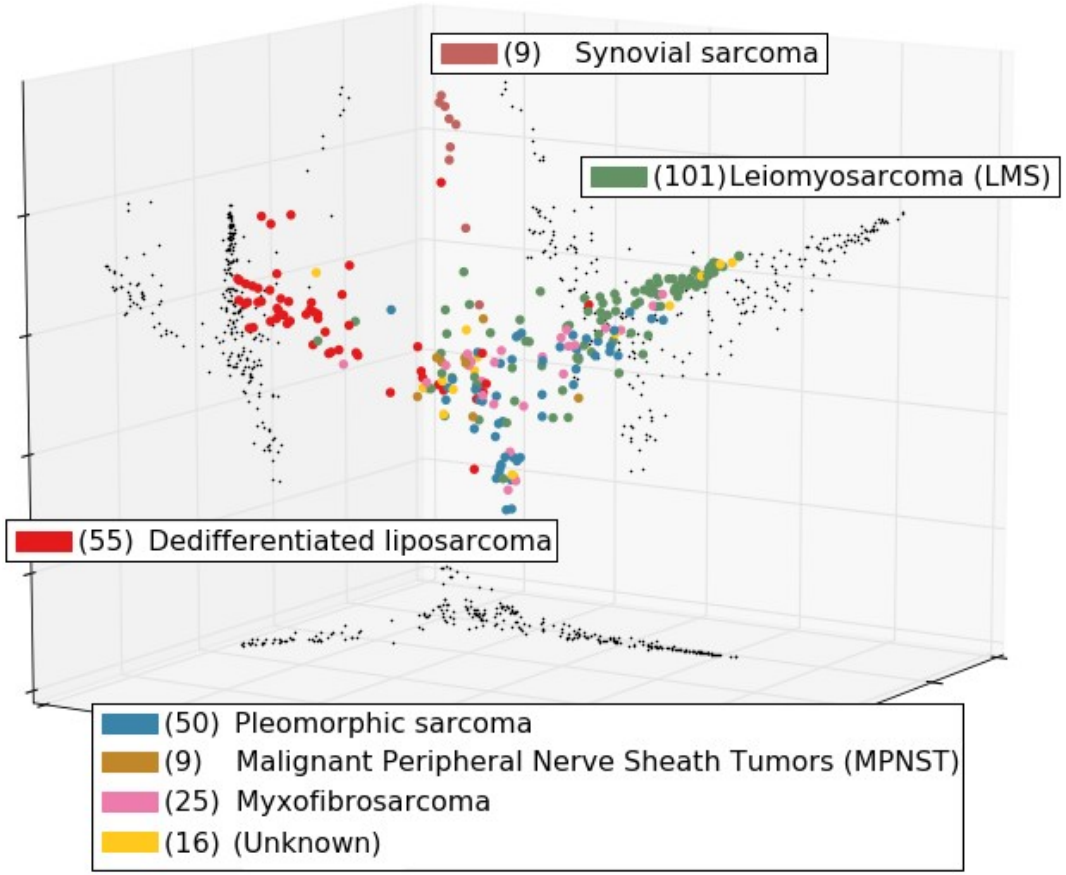
$$L = I - \widetilde{D}^{-1}\widetilde{W}$$

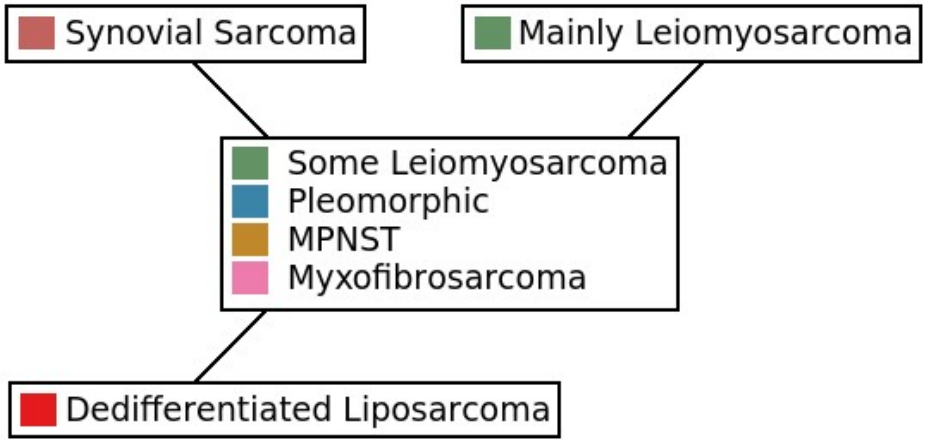
Eigenvectors



Feature network EMD for clustering

TCGA Sarcoma





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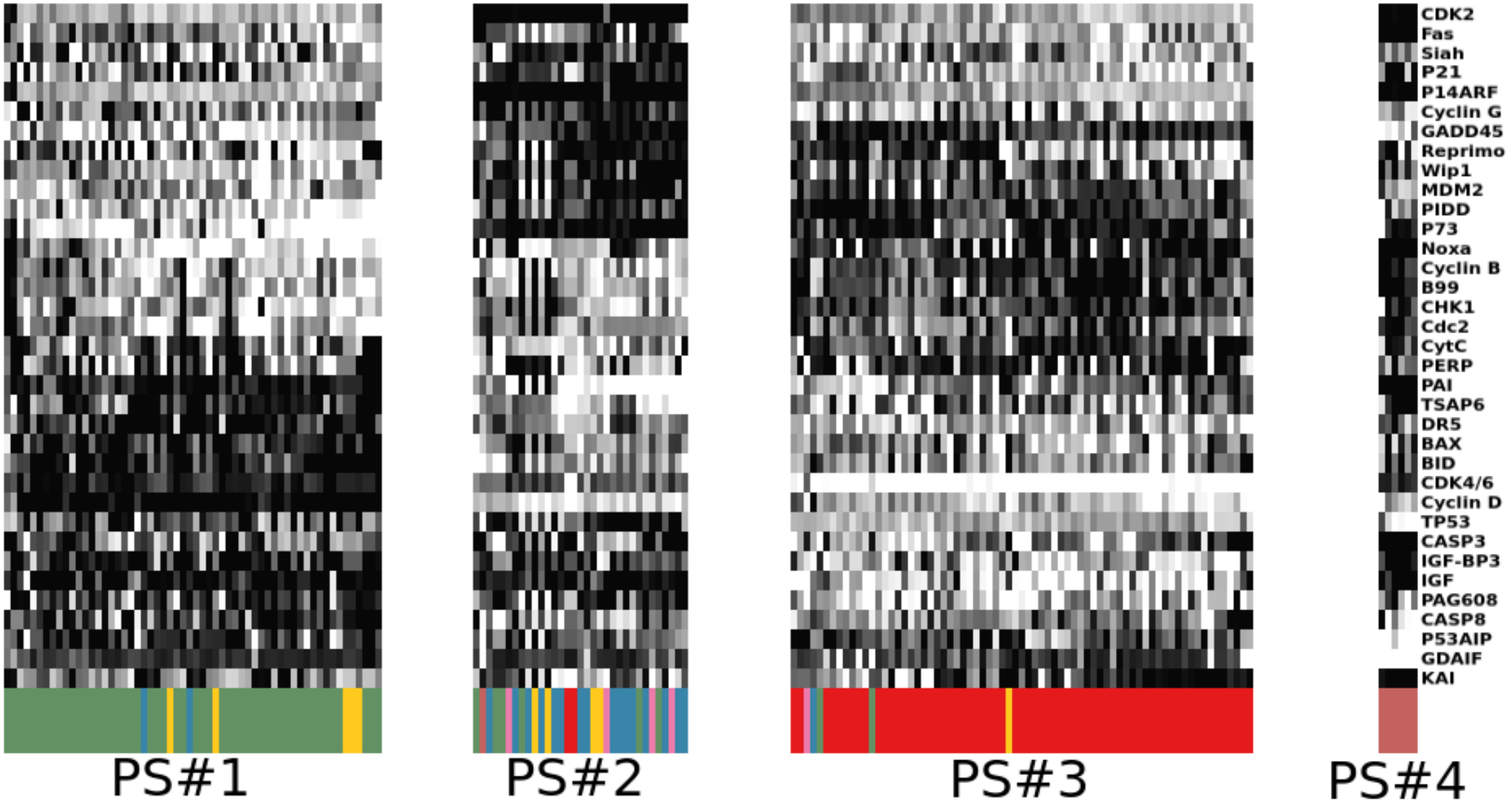

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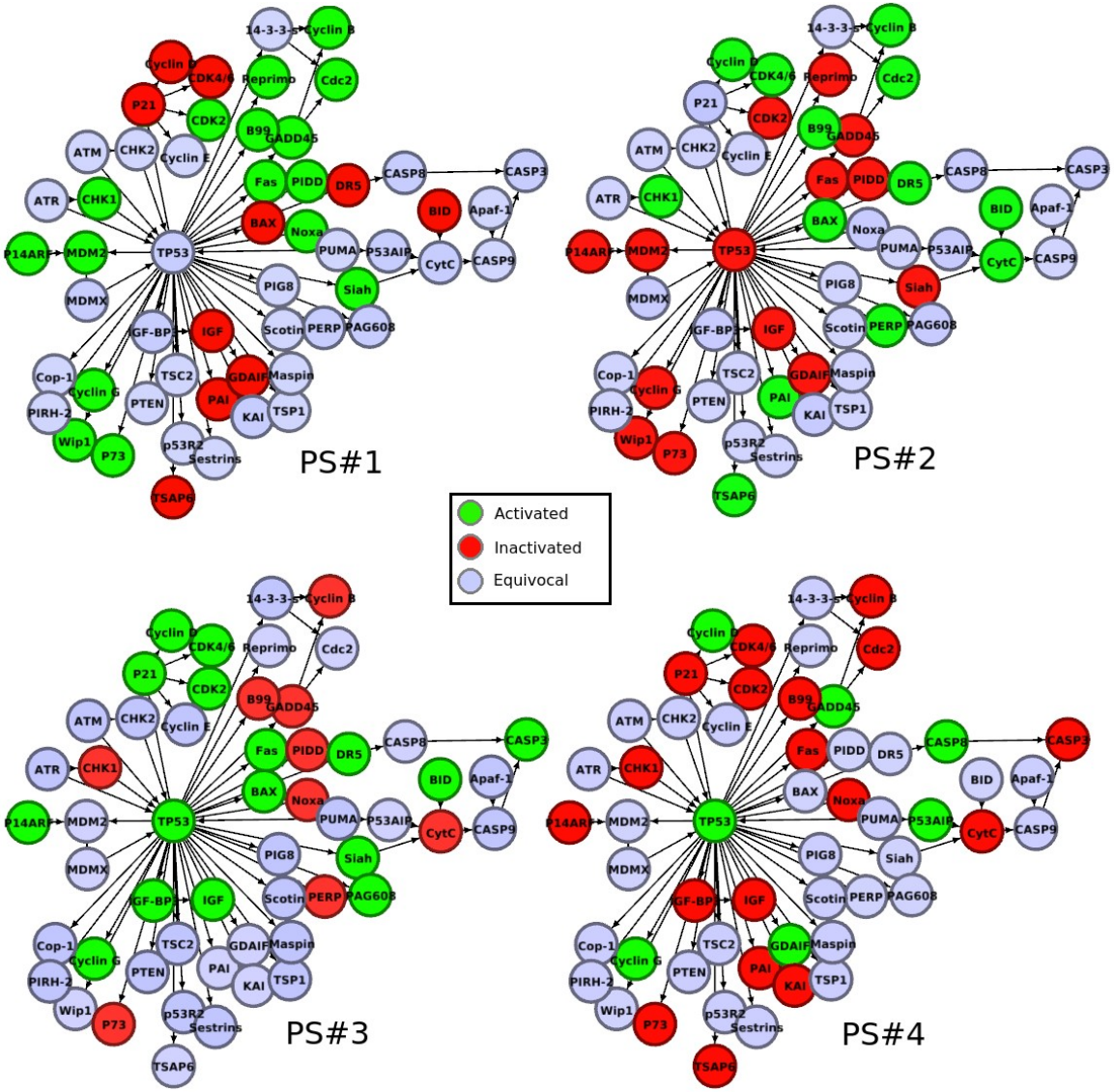
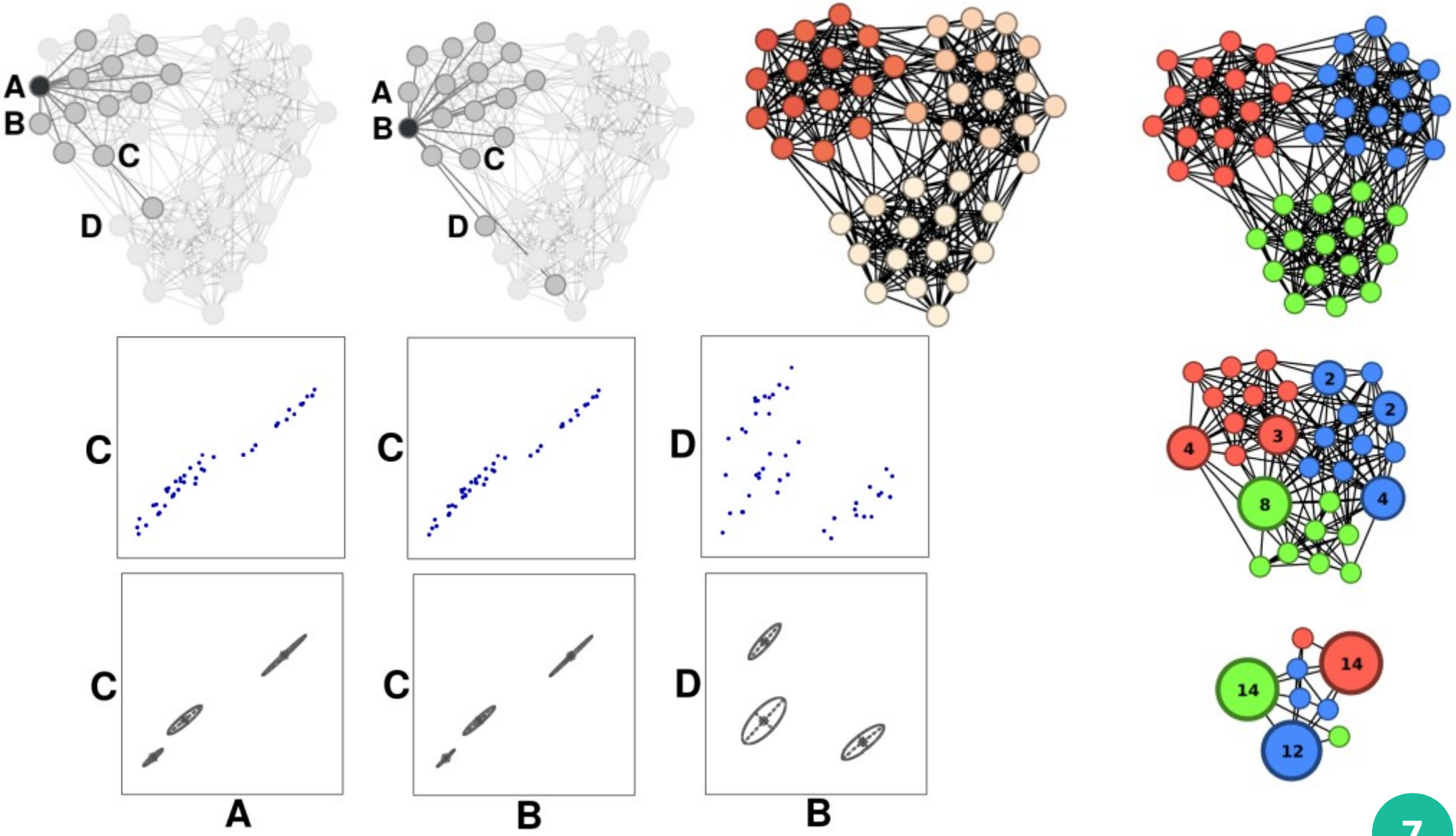


OMT on GMMs of joint distributions

Network simplification with supernodes