

[illegible]

Adjacency matrix of $\mathcal{G}_{II}^{(4)}$ - Density = 10%
 Clustered and reordered based on the Spectral clustering outcome
 Modularity = 0.067

Adjacency matrix of $\mathcal{G}_{II}^{(4)}$ - Density = 10%
 Clustered and reordered based on the DANMF-based clustering outcome
 Modularity = 0.004

The figure displays the adjacency matrix of $\mathcal{G}_{II}^{(4)}$ with a density of 10%. The matrix is clustered and reordered based on the DANMF-based clustering outcome, resulting in a clear block structure. The color scale ranges from 0.0 (dark blue) to 1.0 (yellow), indicating the strength of the connections. The matrix is symmetric, and the diagonal elements are all 1.0, representing self-loops. The clustering outcome shows several distinct communities, with the most prominent ones being the large blue blocks along the diagonal and the smaller yellow blocks in the upper right and lower right quadrants.