

1 Grid graph

A comprehensive performance evaluation of our spectral graph topology algorithm was performed considering a grid graph model with 64 nodes $\mathcal{G}_{\text{grid}}^{(64)}$. The edges of the grid graph are sampled from $\text{Uniform}(0.1, 3)$. Then we estimate the Laplacian matrix based on T samples from $\mathcal{N}(\mathbf{0}, \mathbf{L}_{\text{grid}}^\dagger)$ and compute the relative error and the F-score. We perform that 100 times for a fixed number T and we average out the relative errors and F-scores.

For the values of T such that $T/N > 1$, we fix $\beta = 4$. Otherwise, we start with $\beta = 10^{-2}$, and we exponentially increase it up to $\beta = 4$.

Figure 1 shows the performance of our algorithm for different sample size regimes. It also shows the performance for the GGL algorithm proposed by Egilmez (2017).

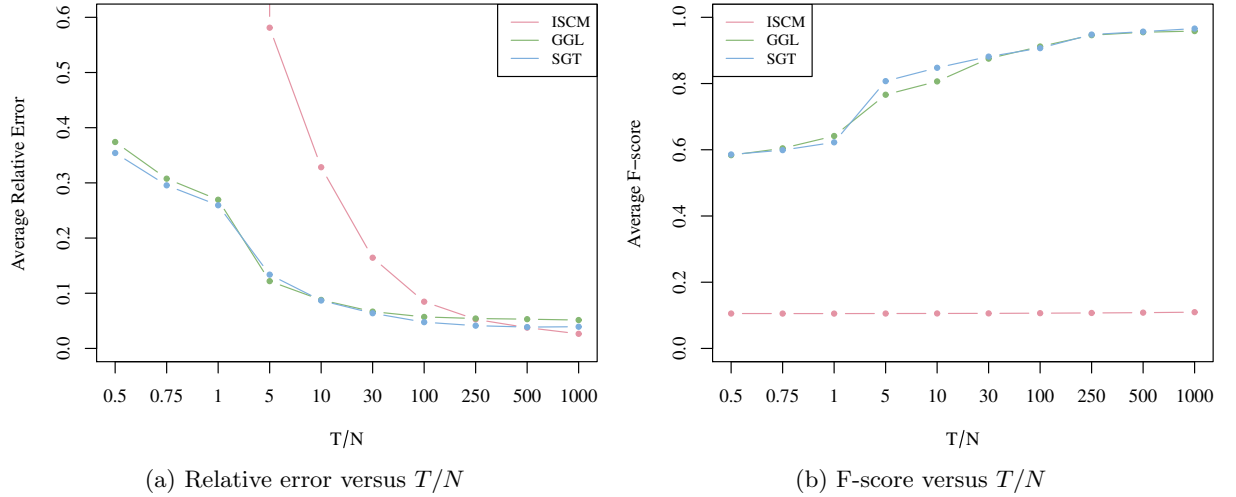


Figure 1: Average performance results for learning Laplacian matrix of a $\mathcal{G}_{\text{grid}}^{(64)}$.