

# Semidefinite matrix completion and Gaussian graphical models

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The question of existence of ML-estimators in Gaussian graphical models can be rephrased as a positive definite matrix completion problem with additional rank constraints on the specified entries. If the underlying graph is chordal, both problems are well understood. However, for non-chordal graphs the only known results treat the simple cycle. I will extend those results to the bipartite graph  $K_{2,m}$  and small grids. Finally, if time permits, I will discuss the semidefinite matrix completion problem, when additional symmetry constraints are imposed by a vertex and edge coloring.