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DISSERTATION PROPOSAL

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High-Dimensional Graphical Models

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ABSTRACT

Undirected graphical models have now become a common tool in many fields and a useful way of exploring and modeling the distribution. In this proposal, we will discuss standard and alternative approaches for undirected graph estimation and density estimation in high dimensions. In particular, we will investigate an aggregation procedure for estimating the inverse covariance matrix in Gaussian graphical models. We will also introduce the blossom tree graphical models, which bring together the Gaussian, nonparanormal, and forest graphical models. We will end with a discussion of possibilities for future work.