THE UNIVERSITY OF CHICAGO

Department of Statistics

MASTER'S THESIS PRESENTATION

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"Estimation of Large Covariance Matrices Via Regularized Methods

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ABSTRACT

In this paper I consider estimation of large covariance matrices with p variables and n observations where $p \gg n$ as one might think conventional covariance matrix estimation would behave badly when number of covariates are large. This paper investigates two methods of estimating large covariance matrices with regularization. I consider estimating banding empirical covariance matrix, and a banded version of the inverse of the covariance. The banded estimator and its inverse are consistent in the matrix L_2 norm if $\frac{\log(p)}{n} \to 0$, and it gives explicit rates.

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