

# Regularized covariance matrix estimation

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## Abstract

I'll review and discuss some of the different themes of regularized estimation of the population covariance matrix:

1. Why estimate it and in what norm ?
2. Pathologies of the empirical covariance matrix.
3. Notions of sparsity and methods of regularization.
4. Results of Bickel and Levina (2004,2006).
5. Some future directions.