

Stanford University
Department of Statistics

DEPARTMENTAL SEMINAR

4:30pm, Tuesday, September 24, 2019
Lane History Corner (01-200) Room 034

Refreshments served at 4pm in Sequoia Lounge.

Speaker: Takeru Matsuda, *University of Tokyo*

Title: Singular value shrinkage prior: A matrix version of Stein's prior

Abstract:

We develop singular value shrinkage priors for the mean matrix parameters in the matrix-variate normal model with known covariance matrices. Our priors are superharmonic and put more weight on matrices with smaller singular values. They are a natural generalization of Stein's prior. Bayes estimators and Bayesian predictive densities based on our priors are minimax and dominate those based on the uniform prior in finite samples. In particular, our priors work well when the true value of the parameter has low rank. We also develop an empirical Bayes algorithm for the matrix completion problem, which is motivated from the singular value shrinkage estimator by Efron and Morris.