

國立中央大學

統計研究所

學術演講

主講人：楊鈞濤 助理教授（國立臺灣大學數學系）

講題：**Bayesian Shrinkage Estimation: Shrinkage Priors and Superharmonic Priors**

時間：111年12月20日（星期二）上午11：00 ~ 12：00

地點：中央大學鴻經館M429室

茶會：上午 10：30 ~ 11：00 地點：鴻經館 510 室

ABSTRACT

This talk starts with the classical shrinkage estimator: the James-Stein estimator, which dominates the MLE under the squared error loss. Another famous example of shrinkage estimation is the LASSO, which simultaneously performs variable selection and estimation. Both these two examples show that an appropriate bias-variance trade-off can be beneficial and these two estimators can also be derived under a Bayesian framework: LASSO is the MAP under the Laplace prior and James-Stein estimator is the posterior mean under a superharmonic prior. In this talk, I briefly review the recent advances in the research of these two kinds of priors, namely shrinkage priors and superharmonic priors, and their applications including Bayes multiple testing and Bayesian prediction. Summarily, superharmonic priors give better estimation and prediction results, whereas shrinkage priors has additional benefits like variable selection and FDR control. Lastly, I will present some of my ongoing research to conclude this talk.

Keywords: shrinkage estimation, superharmonicity, multiple testing.

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