ABSTRACT FOR 11/3/17 ECONOMETRICS COLLOQUIA SEMINAR BY DR. JESSIE LI

**"Constrained and Penalized Estimation using MCMC"**

Joint with Ron Gallant, Han Hong, and Michael Leung

We study inference for parameters defined by either classical extremum estimators or Laplace-type estimators subject to general nonlinear constraints on the parameters. We show that running MCMC on the penalized version of the problem offers computationally attractive alternatives to solving the original constrained optimization problem. Bayesian credible intervals are asymptotically valid confidence intervals in a pointwise sense, providing exact asymptotic coverage for general functions of the parameters. Both nonadaptive and adaptive penalizations are allowed. We start with the $\ell\_1$ penalty but other penalty functions can also be used. These methods are motivated by and include as special cases model selection and shrinkage methods such as the LASSO and its Bayesian and adaptive versions. Theoretic findings are validated by finite sample simulations. In our empirical application, we use a moment constrained Bayes estimator on a CRRA asset pricing model.