Statistics
Research (StaR) Colloquium

Visitor Seminar

Dept of Mathematics and Statistics
King Fahd University of Petroleum and Minerals

Presenter	**Prof S. Ejaz Ahmed** Dept of Mathematics & Statistics University of Windsor
Title	**Shrinkage, Lasso/Lars and Related Estimation Strategies in Partially Linear Models**
Topic & (Level)	Statistical Estimation **(Statistical Inference)**
Audience	All KFUPM community are cordially Invited
Date	Tuesday, Dec 11, 2007
Time	1:30 PM – 2:30 PM
Location	Building 5, Smart Classroom # 203

Abstract

In this talk, I consider a partially linear model where the vector of coefficients in the linear part can be partitioned where first sub-vector is the coefficient vector for main effects (e.g. treatment effect, genetic effects) and the other is a vector for 'nuisance' effects (e.g., age, lab). In this situation, inference about important parameters may benefit from moving the least squares estimate for the full model in the direction of the least squares estimate without the nuisance variables (Steinian shrinkage), or to drop the nuisance variables if there is evidence that they do not provide useful information (pre-testing). We investigate the asymptotic properties of Stein-type and pretest semi-parametric estimators under quadratic loss and show that under general conditions a Stein-type semi-parametric estimator improves on the full model conventional semi-parametric least square estimator. We also consider a Lasso type estimator for partially linear models and give a Monte Carlo simulation comparison of theses estimators. The comparison shows that shrinkage method performs better than Lasso when the number of restriction on the parameter space is large.

Tea and Coffee will be served