Title: Asymptotic composite regression

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Time & Place: Wednesday, October 22, 2014, 4:00–5:00pm
Room 133 SMI
(Cookies & Coffee @ 3:30 in Rm 1210 MSC)

Abstract:

Composition methodologies in the literature have been applied to variance reduction via the direct linear combination of either initial estimators or objective functions. Unlike these methodologies, the asymptotic presentation of initial estimators and its relationship to model-independent parameter values are used to propose a novel approach. A least squares fitting can then be applied to optimize the weights in the composition such that both variance and bias reduction can be achieved. The examples are quantile regression and blockwise empirical likelihood, which have a smaller limiting variance; the Stein estimator, which achieves both smaller bias and smaller variance; and nonparametric kernel estimation which has a faster convergence rate than the classical optimal one. Simulations are conducted to examine its performance in finite sample situations.