Statistics Seminar

Department of Mathematical Sciences

DATE:	Thursday, October 29, 2015
TIME:	1:15pm to 2:15pm
LOCATION:	WH 100E
SPEAKER:	Ruiqi Liu, Binghamton University
TITLE:	The transfer principle: a tool for complete analysis

Abstract

This paper gives a general method for deriving limiting distributions of complete case statistics for missing data models from corresponding results for the model where all data are observed. This provides a convenient tool for obtaining the asymptotic behavior of complete case versions of established full data methods without lengthy proofs. The methodology is illustrated by analyzing three inference procedures for partially linear regression models with responses missing at random. We first show that complete case versions of asymptotically efficient estimators of the slope parameter for the full model are efficient, thereby solving the problem of constructing efficient estimators of the slope parameter for this model. Secondly, we derive an asymptotically distribution free test for fitting a normal distribution to the errors. Finally, we obtain an asymptotically distribution free test for linearity, i.e. for testing that the nonparametric component of these models is a constant. This test is new both when data are fully observed and when data are missing at random.