

Colloquium

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Friday, August 29, 2014 at 3pm in Bell Hall 143

Statistical Methods for Analyzing Panel Count Data

Panel count data is a special type of longitudinal count data with broad applications in biomedical research, clinical trial, social demographic study, industrial engineering and econometrics. Analysis of panel count data is a challenging task both methodologically and numerically. This talk provides an overview of statistical methods in this area with emphasis on likelihood based inference. Particularly, we would like to propose spline-based sieve non/semi-parametric maximum likelihood inferences to deal with over-dispersed panel count data and to demonstrate their robustness and statistical efficiency. Simulation studies and real data application will be carried out to illustrate validity of the proposed methods. Future direction in research of panel count data will be outlined.