MICHIGAN STATE UNIVERSITY
Department of Statistics and Probability

COLLOQUIUM

Chenxi Li

Department of Epidemiology and Biostatistics
Michigan State University

The Proportional Subdistribution Hazards Model for Interval Censored Competing Risk Data

Tuesday, January 21, 2014
10:20 a.m. - 11:10 am
Refreshments 10:00 am
C405 Wells Hall

Abstract:

We consider estimation of the cumulative incidence function (CIF) for competing risks data subject to mixed case interval censoring. The proportional subdistribution hazards model (Fine and Gray, 1999) is used to model the CIF and is coupled with sieve semiparametric maximum likelihood estimation based on univariate or multivariate likelihood. The univariate likelihood enables separate estimation of CIF for each competing risk, in contrast with the multivariate likelihood which estimates CIFs for multiple competing risks jointly. Under both likelihoods and certain regularity conditions, we show that the regression coefficient estimator is asymptotically normal and semiparametrically efficient, although the spline-based sieve estimator of the baseline cumulative subdistribution hazard converges at a rate slower than root-n. The proposed method is evaluated by simulation studies regarding its finite sample performance and is illustrated using data from a dementia cohort study.

To request an interpreter or other accommodations for people with disabilities, please call the Department of Statistics and Probability at 517-355-9589.