



香港中文大學統計學系

Department of Statistics

THE CHINESE UNIVERSITY OF HONG KONG

SEMINAR

DEPARTMENT OF STATISTICS
THE CHINESE UNIVERSITY OF HONG KONG

Semiparametric Regression Analysis of Interval-Censored Multi-State Data with An Absorbing State

INVITED SPEAKER

Yu GU,

Department of Biostatistics,

University of North Carolina at Chapel Hill

TIME

December 8, 2022 (Thursday) · 9:30 am - 10:30 am

VENUE

Zoom ID: 606 898 8598 · Password: cuhkstat · [Zoom link](#)

ABSTRACT

In studies of chronic diseases, the health status of a subject can often be characterized by a finite number of transient disease states and an absorbing state, such as death. The times of transitions among the transient states are ascertained through periodic examinations and thus interval-censored. The time of reaching the absorbing state is known or right-censored, with the transient state at the previous instant being unobserved. In this talk, I will present a general framework for analyzing such multi-state data through semiparametric proportional intensity models with random effects. Nonparametric maximum likelihood estimation and sieve estimation are combined for inference, and a stable EM algorithm is developed for computation based on latent Poisson variables. The estimators are shown to be consistent, asymptotically normal and efficient. I will demonstrate the performance of the proposed methods through simulation studies and provide an application to a cardiac allograft vasculopathy study.