Joint Statistics Seminar

The Hong Kong University of Science and Technology

Joint Modeling of Longitudinal and Survival Data

by

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Date: November 21, 2008 (Friday)
Time: 4:00 p.m. – 5:00 p.m.
Venue: Room 3401 (Lift 17/18)

Abstract

In clinical and other longitudinal studies, it has become increasingly common to observe an event time of interest, usually referred to as a survival time, along with baseline and longitudinal covariates. Both the survival and covariate processes are of interest, as is the relationship between them. Due to several complications, traditional approaches, including the partial likelihood approach for the Cox proportional hazards model and the rank based approach for the accelerated failure time model, encounter difficulties when longitudinal covariates are involved in the modeling of survival times. Moreover, the longitudinal processes are often subject to informative dropout. Jointly modeling the survival and longitudinal data emerges as an effective way to overcome these difficulties.

In this talk, we will discuss the challenges in this area and provide several solutions. One of the difficulties is that maximum likelihood estimates (MLE) often do not exist when the survival component is modeled semiparametrically as in the Cox or accelerated failure time models. Several alternatives will be illustrated, including nonparametric MLEs, the method of sieves, and pseudo-likelihood approaches. Another difficulty is related to the parametric modeling of the longitudinal component. Nonparametric alternatives will be considered to deal with this complication.

*The talk is based on various joint work with Jimin Ding, Fushing Hsieh and Yi-Kuan Tseng.

❖ ***All interested are welcome!*** ❖
For details, please contact ISOM Department.