
Joint Statistics Seminar

The Hong Kong University of Science and Technology

Semiparametric Models for Regression Analysis of Competing Risks Data

by

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Date: November 29, 2007 (Thursday)

Time: 4:00 p.m. - 5:00 p.m.

Venue: Room 3315 (Lift 17/18)

Abstract

We develop a semiparametric version of the competing risks model, where cause-specific hazards (CSHs) are modelled via the conditional probability of a failure type and the overall hazard rate. Such model is used for a regression analysis on CSHs assuming proportional hazards and logistic relative risk. Frequentist estimation based on the partial likelihood is described together with the derivation of large sample properties. Bayesian methods are also developed by using a beta process prior for the baseline cumulative hazard and a Jeffreys-type prior for the finite-dimensional parameters of the model. We study the tail behaviour of the partial likelihood and the marginal posterior density of the finite dimensional parameters with a constant prior, giving necessary conditions for exponentially decreasing tails in both cases. We provide an illustration for the estimation of the prevalence of risks in a carcinogenesis experiment on rodents.

Joint work with Nils Lid Hjort (University of Oslo)

❖ **All interested are welcome!** ❖

For details, please contact ISMT Department.