



ANNOUNCES A
COLLOQUIUM

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will speak on

Partly Functional Temporal Process Regression with Semiparametric Profile Estimating Functions

Time: 3:00 – 4:00 PM

Date: Friday, January 19, 2007

Place: Speakman Hall 318

Abstract

Marginal mean models of temporal processes in event time data analysis are gaining more attention for their milder assumptions than the traditional intensity models. Recent work on fully functional temporal process regression offers great flexibility by allowing all the regression coefficients to be nonparametrically time-varying. The existing estimation procedure, however, prevents successive goodness-of-fit test for covariate coefficients in comparing a sequence of nested models. This article proposes a partly functional temporal process regression model in the line of marginal mean models. Some covariate effects are time-independent while the others are completely unspecified in time.

This class of models is very rich, including the fully functional model and the semiparametric model as special cases. To estimate the parameters, we propose semiparametric profile estimating functions which are solved via an iterative algorithm, starting with a consistent estimate from a fully functional model in the existing work. No smoothing is needed, in contrast to other varying coefficient methods. The weak convergence of the resultant estimators is developed using the empirical process theory. Successive tests of time-varying effects and backward model selection procedure can then be carried out. The practical usefulness of the methodology is demonstrated through a simulation study and a real example of recurrent exacerbations among cystic fibrosis patients.