

清華大學、交通大學
統計學研究所
專題演講

題目：Simultaneous confidence bands for functional regression models
and statistics in gynecologic oncology

主講人：張中教授 (中山大學應用數學系)

時間：107年11月23日(星期五)上午10:40 - 11:40
(10:20 - 10:40 茶會於統計所821室舉行)

地點：清大綜合三館837室

Abstract

In the first part of my talk, I will talk about the simultaneous confidence bands for functional regression models. In recent years, the field of functional data analysis (FDA) has received a great deal of attention, and many useful theories and interesting applications have been reported. One topic of particular interest involves estimation of simultaneous confidence bands (SCB) for an unknown function. Degras (2011) proposed an estimator of SCBs for the mean function in a simple (no covariates) function-on-scalar regression model that relies on some assumptions on the tail behavior of the errors. In the case that such distributional assumptions do not hold, Degras also proposed a bootstrap method (sampling with replacement). We consider a more general function-on-scalar regression model that involves multiple covariates and allows the variance function of the functional responses to be dependent on the covariates (heterogeneity). In this general model, we propose a wild bootstrap method for estimating SCBs for the coefficient function. Some asymptotic results are provided for the simple case (no covariates) and simulation results for both the simple and general models.

In the second part of my talk, I will talk about the statistical analysis in gynecologic oncology. I will first introduce the background of gynecologic oncology and then describe some issues that statisticians can address. In addition, I will report some interesting discoveries we found.

敬請公佈

歡迎參加