

國立中山大學應用數學系

學術演講

主講人：Prof. Wolfgang Hardle

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講題：Bootstrap Inference in Semiparametric Generalized Additive Models

日期：92 年 12 月 16 日（星期二）16：10～17：00

地點：理學院 4 樓理 4009-1 室（教室設備：白板、麥克風、單槍、電腦）

茶會：15：30 於理 4010 室

Abstract

We consider semiparametric generalized additive models with response Y , covariates X, T such that

$$E(Y|X;T) = G\{X^T\beta + \alpha + m_1(T_1) + \dots + m_d(T_d)\}.$$

Here, G is a known link, α, β are unknown parameters, and $m_1, \dots, m_d$ are unknown (smooth) functions. The nonparametric component functions may depend on more than one covariate. Estimates of $m_1, \dots, m_d, \alpha$ and β are presented and asymptotic distribution theory is provided. The main focus of the paper is the application of bootstrap methods. It is shown that bootstrap works for bias correction, hypothesis testing (e.g. component-wise analysis) and the construction of uniform confidence bands. Various tests for model specification and parametrization are given, in particular for testing the link function specification and additivity. The practical performance of our methods is illustrated in simulations and in an application to East-West German migration.¹

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