國立中山大學應用數學系
學術演講

講　者：Porfessor Masanobu Taniguchi

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時　間：2015/07/21（星期二）11：00 ~ 12：00

地　點：理學院四樓理 SC 4009-1 室

茶　會：10:30 ~ 11:00 於理 SC 4010 室（系辦公室）

Preliminary Test Estimation for Regression Models with Long-Memory Disturbance

For a class of time series regression models with long-memory disturbance, we are interested in estimation of a subset of the regression coefficient vector and spectral parameter of the residual process when the complementary subset is suspected to be close to 0. In this situation we evaluate the mean square errors of the restricted and unrestricted MLE and a preliminary test estimator when the complementary parameters are contiguous to zero vector. The results are expressed in terms of the regression spectra and the residual spectra. Since we assume long-memory dependence for the disturbance, the asymptotics are much different from the case of i.i.d. disturbance. Numerical studies elucidate some interesting features of regression and long-memory structures.

Asymptotics of Realized Volatility with non-Gaussian ARCH(∞) Microstructure Noise

In order to estimate the conditional variance of some specific day, the sum of squared intraday-returns, as known as "realized volatility" or "realized variance", is often used. Although this estimator does not converge to the true volatility when the observed price involves market microstructure noise, some subsample-based estimator is known to resolve this problem. In this talk, we will study the asymptotics of this estimator, assuming that market microstructure noise follows a non-Gaussian autoregressive conditional heteroskedastic model of order ∞ (ARCH(∞)). There we elucidate the asymptotics of realized volatility and subsample estimator, which are influenced by the non-Gaussianity and dependent structure of the noise. Some numerical studies are given, and they illuminate interesting features of the asymptotics.

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