Seminar

Title：Valid Post-Averaging Inference in AR-G/GARCH Models

Speaker：Prof. Hsin-Chieh Wong（ 翁新傑 助理教授 ）
(Department of Statistics, National Taipei University)

Time：14:00 ~ 15:00, Wednesday, April 17, 2024

Place：Auditorium, B1F, Institute of Statistical Science

Abstract

Data analysis derives statistical inference from the resulting model performed by data-driven model (variable) selection or averaging. However, a puzzle is that inference after model selection may not guarantee to enjoy tests and confidence intervals provided by classical statistical theory. This paper proposes a valid post-averaging confidence interval in an AR model driven by a general GARCH model. To reach this goal, we investigate the asymptotic inference of the nested least squares averaging estimator under model uncertainty with fixed coefficients setup. Interestingly, based on a Mallows-type model averaging (MTMA) criterion, the weights of the under-fitted model decay to zero while only assigning the asymptotically random weights to the just-fitted and over-fitted models. Building on the asymptotic behavior of model weights, we derive the asymptotic distributions of the MTMA estimator. Monte Carlo simulations show that the proposed method achieves the nominal level.

Keywords: AR-G/GARCH, model averaging, heavy tails, tail behavior, stable distribution, Mallows-type criteria.

※ **Tea reception starts at 13：40.**
※ **Lecture in Mandarin. Online live streaming through Cisco Webex will be available.**