
Joint Statistics Seminar

The Hong Kong University of Science and Technology

Multiple Local Whittle Estimation in Stationary Systems

by

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Time: 3:00 p.m. - 4:00 p.m.

Venue: Room 3408 (Lift 17 & 18)

Abstract

Two related long memory time series $x(t), y(t)$ may have different or identical memory parameters. In the latter case the possibility exists of domination by a single common component, such that an instantaneous linear combination $x(t) - \beta y(t)$ of the series has shorter memory than $x(t), y(t)$. A semiparametric version of the problem presents four unknown parameters of interest: two memory parameters, a phase parameter, and β . We estimate them jointly by optimizing a local Whittle function that entails a single smoothing number, covering also the case where $\beta=0$ and $x(t)$ and $y(t)$ have different memory parameters. The proof of consistency is non-standard in that the β estimate converges faster than the others. Joint asymptotic normality is also established, implying correlation between all estimates in general. Comparisons are made with other estimation strategies. Misspecification of the phase, which is usually assumed known in this setting, can slow convergence of estimates of β , and cause inconsistency of memory parameter estimates.

❖ **All interested are welcome!** ❖

For details, please contact ISMT Department.