THE CHINESE UNIVERSITY OF HONG KONG

Department of Statistics

will present a seminar entitled

Likelihood inference for discriminating between long-range dependence and change-point models

by

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on

Monday, 29 March 2010
11:30am – 12:30pm

in

Lady Shaw Building G36
The Chinese University of Hong Kong

Abstract:

We develop a likelihood ratio test procedure for discriminating between a long-range dependent time series and a weakly dependent time series with change-points. Under the null hypothesis, the time series consists of two segments of weakly dependent time series with different means, and possibly different covariance functions. The location of the shift in the mean is unknown. Under the alternative, the time series has no shift in mean but rather is long-range dependent. The likelihood ratio statistic is defined as the normalized log-ratio of the Whittle likelihood between the change-point model and the long-memory model. Under the null, we show that the likelihood ratio is asymptotically normal. The limit theory is illustrated via simulation and compared with cumsum like approaches. We also apply this test to environmental and financial time series data.

All are Welcome