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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

PHD STUDENT SEMINAR

Maximum Likelihood Estimation for Multivariate All-Pass Time Series Models

By

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Abstract

All-pass models generate uncorrelated but dependent time series when the noise is non-Gaussian. In this talk, we introduce a multivariate all-pass time series model, which has an explicit form that simplifies both theoretical analysis and computation. To estimate the model, we study the approximate maximum likelihood estimator and establish its asymptotic normality. For the order selection, the sequential likelihood ratio test is employed. Then, we present a procedure to identify the noninvertible structural VARMA model with the multivariate all-pass model. Simulations are carried out to investigate the finite-sample performance. Finally, empirical applications involving log returns and trading volumes are presented.

Date : 27 April 2026 (Monday)

Time : 10:00am

Venue : Room 4472 (near Lifts 25/26)

All are Welcome!