

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

50th Anniversary Seminar Series

Professor YAO Qiwei

Department of Statistics
London School of Economics
UK

will give a talk
entitled

**KRIGING OVER SPACE AND TIME BASED ON
A LATENT REDUCED RANK STRUCTURE**

Abstract

We propose a new approach to extract nonparametrically covariance structure of a spatio-temporal process in terms of latent common factors.

Though it is formally similar to the existing reduced rank approximation methods (Section 7.1.3 of Cressie and Wikle, 2011), the fundamental difference is that the low-dimensional structure is completely unknown in our setting, which is learned from the data collected irregularly over space but regularly in time. We do not impose any stationarity conditions over space either, as the learning is facilitated by the stationarity in time. Krigings over space and time are carried out based on the learned low-dimensional structure. Their performance is further improved by a newly proposed aggregation method via randomly partitioning the observations accordingly to their locations. A low-dimensional correlation structure also makes the kriging methods scalable to the cases when the data are taken over a large number of locations and/or over a long time period. Asymptotic properties of the proposed methods are established. Illustration with both simulated and real data sets is also reported.

on

Tuesday, April 11, 2017

(Refreshments will be served from 10:15 a.m. outside Room 301 Run Run Shaw Building)

10:30 a.m. – 11:30 a.m.

at

Room 301, Run Run Shaw Building

Visitors Please Note that the University has limited parking space. If you are driving please call the Department at 3917 2466 for parking arrangement.