DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Departmental Seminar

Dr. Qinwen WANG

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China

will give a talk
entitled

IDENTIFICATION OF THE NUMBER OF FACTORS FOR FACTOR MODELING IN HIGH DIMENSIONAL TIME SERIES

Abstract

Identifying the number of factors in a high-dimensional factor model has attracted much attention in recent years and a general solution to the problem is still lacking. A promising ratio estimator based on the singular values of the lagged autocovariance matrix has been recently proposed in the literature and is shown to have a good performance under some specific assumption on the strength of the factors. Inspired by this ratio estimator and as a first main contribution, we will propose a complete theory of such sample singular values for both the factor part and the noise part under the large-dimensional scheme where the dimension and the sample size proportionally grow to infinity. In particular, we provide the exact description of the phase transition phenomenon that determines whether a factor is strong enough to be detected with the observed sample singular values. Based on these findings, we propose a new estimator of the number of factors which is strongly consistent for the detection of all significant factors (which are the only theoretically detectable ones). In particular, factors are assumed to have the minimum strength above the phase transition boundary which is of the order of a constant; they are thus not required to grow to infinity together with the dimension (as assumed in most of the existing papers on high-dimensional factor models).

on

Friday, August 23, 2019

(Refreshments will be served from 10:45 a.m. outside Room 301 Run Run Shaw Building)

11:00 a.m. – 12:00 noon

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.

All interested are welcome