High-Dimensional
Non-Stationary Time Series Analysis

IRTG 1792 Short Course

Wei Biao Wu

What is dependence?

We will briefly review the history of this fundamental problem. By interpreting random processes as physical systems, I will introduce physical and predictive dependence coefficients that quantify the degree of dependence of outputs on inputs.

High-dimensional linear models with dependent errors

We will present a systematic theory for high-dimensional linear models with dependent errors and/or dependent covariates. To study properties of estimates of the regression parameters, we adopt the framework of functional dependence measures.

Random Matrix Theory and Covariance Matrix Estimation

An introduction of modern random matrix theory, in particular the asymptotic theory for eigenvalues of sample covariance matrices will be given. Then I will discuss the high dimensional covariance matrix estimation problem.

Wei Biao Wu received the PhD degree in statistics in 2001 from The University of Michigan. He is currently Professor of Statistics at The University of Chicago. He is interested in developing asymptotic theory for high-dimensional time-series. He has received the National Science Foundation Career Award (2004) and The Tjalling C. Koopmans Econometric Theory Prize (2009).

17.09.2014 | 15:30-16:30

18.09.2014 | 11:00-12:00 & 15:00-16:00

Room 401, SPA1

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