High-Dimensional
Non-Stationary Time Series Analysis

IRTG 1792 Short Course

Victor Chernozhukov

Inference in High-Dimensions

1. De-biased Methods for Inference in High-Dimensions
Examples of causal parameters include individual regression coefficients, average treatment effects, average lifts, and demand or supply elasticities. In fact, estimates of such causal parameters obtained via naively plugging ML estimators into estimating equations for such parameters can behave very poorly due to the regularization bias. Fortunately, this regularization bias can be removed by solving auxiliary prediction problems via ML tools. The method could be called a "double/de-biased ML" method because it relies on estimating primary and auxiliary predictive models to overcome regularization biases.

2. Central Limit Theorems in High Dimensions
We introduce central limit and bootstrap theorems for probabilities that sums of centered high-dimensional random vectors hit hyperrectangles and sparsely convex sets. The result holds uniformly over all hyperrectangles, or more generally, sparsely convex sets, and does not require any restriction on the correlation structure among coordinates of Xi.

25.01.2017 |14:30-18:00

Klasterni 1, Hejnice, Czech Republic

www.hu.berlin/irtg 1792

Victor Chernozhukov is a professor at MIT's Department of Economics. He received the Ph.D. in Economics from Stanford University in 2000. His research focuses on big data and large econometric models.