



Cornell CIS
Statistical Science

STATISTICS SEMINAR



Wednesday, November 15, 2017

4:15 pm

G01 Biotechnology

INES WILMS

Department of Statistical Science,
Cornell University

Sparse multi-class vector autoregressive models

The Vector AutoRegressive (VAR) model is fundamental to the study of multivariate time series. Our interest lies in joint, multi-class estimation of several VAR models. Assume we have K VAR models for K distinct but related classes. We jointly estimate these K VAR models to borrow strength across classes and to estimate multiple models that share certain characteristics. Our methodology encourages corresponding effects to be similar across classes, while still allowing for small differences between them. Moreover, we focus on multi-class estimation of high-dimensional VAR models, i.e. models with a large number of parameters relative to the time series length. Therefore, our estimate is sparse: unimportant effects are estimated as exactly zero, which facilitates the interpretation of the results. We consider a marketing application and a commodity application of the proposed methodology.

Ines Wilms is the Jacob Wolfowitz Visiting Assistant Professor within Cornell's Department of Statistics. Wilms received her PhD in Business Statistics at KU Leuven (2016). Her research focuses on developing statistical methods for analyzing modern, high-dimensional data sets, with a particular focus to time series data sets. The application of the proposed methodologies to a variety of business domains (including marketing, finance and macro-economics) forms an essential part of her research. This has led to several publications in journals such as the Journal of the Royal Statistical Society, International Journal of Forecasting, or European Journal of Operational Research.

Refreshments will be served following the seminar in 1181 Comstock Hall.