Goal and Content:

Modern empirical research in economics and finance is confronted with a vast menu of modeling strategies resulting from different data sets, huge numbers of potential covariates and an increasing number of alternative estimation strategies. The overflow of covariates, potential specifications and estimators makes it difficult to select the best modeling strategy. Standard testing procedures fail or are simply infeasible due to the high dimensionality of the problem. The problem is prevalent e.g. in macroeconomic forecasting, in financial econometrics (e.g. portfolio and risk management), and in the evaluation of causal treatment effects of public policies. Alternative strategies based on algorithmic learning mechanisms (regularization, machine learning, data mining) are not yet well understood in what regards their statistical properties.

The goal of this seminar is to acquaint master students with the necessary toolbox of econometric methods related to high dimensional estimation problems. Students have to write an empirical research paper in which they apply a novel and/or advanced econometric method to shed more light on a real world problem.
**Time and Date:**
The seminar will take place as a block seminar on the following two days:

**Thursday April 11th, 2019, 09-17:00, F208**  
**Friday April 12th, 2019, 09-14:00, F208**

The submission deadline of seminar paper is **March 31st, 2019**

**Prerequisite:**
Econometrics I and Advanced Econometrics (or equivalent). Knowledge of Financial Econometrics and/or Time series Analysis is desirable. We expect that students have a decent programming background in either MatLab, R or Python or at least willing to invest sufficient effort to learn one of these languages.

**Organizational Issues:**
- For enrollment contact: econ.masterseminar@uni-konstanz.de
- For more information contact Winfried Pohlmeier, F319, Tel. 2660, Winfried.Pohlmeier@uni-konstanz.de
- There will be a brief **information session** on the content of the seminar topics and the seminar requirements on **Oct. 22nd 2018, 17:00 -18:00, F 208**
- Seminar participants have to decide on the topics until **Nov. 1st, 2018**
- ECTS: 6 credits
  - There will be topics for which joint work of two participants may be possible.
Suggested Topics:

1. How strongly are stock listed firms connected? An empirical analysis based on the Graphical Lasso at the high frequency level.
2. How are networks determined? Analyzing how peer effects in schools arise.
3. Predicting stock price changes at the tick-by-tick level: An Application of time varying parameter models.
4. Pitfalls and Opportunities of Big Data: Spurious Correlations and Incidental Endogeneity
6. How risky is my model? Model selection with an Application to Regression Discontinuity Designs

The topics above are only first suggestions and are supposed to give a flavor of the seminar’s content. The final topics will be assigned according to the student’s background and interests.