CHANGE-POINT AND MIXTURE MODELS WITH APPLICATIONS TO MACROECONOMIC TIME SERIES AND OPTION PRICING

Time and place
29 October 2014
Building 2610, room S313B
Fuglesangs Allé 4
8210 Aarhus V

Lecturer
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Course description
It is well known that econometric models with a fixed structural form or constant parameters are likely miss-specified when estimated on long samples. This has severe consequences for the interpretation of the models and their forecasting performance. For example, the estimates of a GARCH volatility mod-el may suffer from a substantial upward bias in the persistence parameters because the form of the conditional variance is relatively inflexible and held fixed throughout the entire sample period.

Finite mixture, Markov Switching and change-point models are flexible parametric models that can capture many time series features. We will cover several models used for financial and macroeconomic time series. Inference for the models will be classical or Bayesian depending on the complexity of the likelihood. However no prior knowledge of Bayesian techniques is required. The applications we will involve macroeconomic time series and option prices.

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Program

09:00 – 10:30 Lecture
10:30 – 10:45 Break
10:45 – 12:15 Lecture

12:15 – 13:00 Lunch

13:00 – 14:30 Lecture
14:30 – 14:45 Break
14:45 – 16:15 Lecture

Literature

- Bauwens, L., Koop, G., Korobilis, D., Rombouts, J.V.K., (2013), *A Comparison of Forecasting Procedures for Macroeconomic Series: The Contribution of Structural Break Models*, forthcoming in the Journal of Applied Econometrics.
- Bauwens, L., Dufays, A., Rombouts, J.V.K., (2013), *Marginal Like-lihood Computation for Markov Switching and Change-point GARCH Models*, forthcoming in the Journal of Econometrics.
- Rombouts, J.V.K., Stentoft, L., (2014), *Option Pricing with Asym-metric Heteroskedastic Normal Mixture models*, forthcoming in In-ternational Journal of Forecasting.
- McLachlan, G., and D. Peel (2000): *Finite Mixture Models*. Wiley Interscience, New York.

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