ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

Invitation to the Presentation about the Workplacement

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"Shrinkage Priors for Bayesian Vectorautoregressions featuring Stochastic Volatility Using the R Package bayesianVARs"

N.1.43 Wednesday, 6 December 2023 11:15 a.m.

Abstract

Vectorautoregressions (VARs) model the relationship between multiple time-series as they change over time. Their inherent flexibility – VARs can be used for describing the dynamic behavior of time-series and for forecasting – makes VARs very popular statistical models, especially in macroeconomics and related fields. It is well known, that VARs are prone to overfitting. Bayesian shrinkage priors alleviate that problem by shrinking coefficients towards zero. The R package **bayesianVARs** implements several state-of-the-art shrinkage priors for VARs, taking into account latest research on structured (semi-global-local) shrinkage priors. The user can choose between two different stochastic volatility specifications for the error term, namely Cholesky stochastic volatility and the order-invariant factor stochastic volatility specification. **bayesianVARs** provides efficient Markov Chain Monte Carlo (MCMC) algorithms for the fully Bayesian estimation of VARs.

All computationally intensive tasks are written in C++ and interfaced with R. Last, the packages offers functionality to assess out-of-sample predictive performance through log-predictive-likelihoods as well as user-friendly summary and visualization methods.

Gregor Kastner and the Department of Statistics look forward to seeing you at the talk!