Institut für Ökonometrie und Statistik

Forschungsseminar

Prof. Dr. Thomas Kneib
13.06.2017, 16:00 (c.t.)

Seminargebäude - S12

Bayesian Structured Additive Distributional Regression

Abstract

We propose a generic Bayesian framework for inference in distributional regression models in which each parameter of a potentially complex response distribution and not only the mean is related to a structured additive predictor. The latter is composed additively of a variety of different functional effect types such as nonlinear effects, spatial effects, random coefficients, interaction surfaces or other (possibly nonstandard) basis function representations. To enforce specific properties of the functional effects such as smoothness, informative multivariate Gaussian priors are assigned to the basis function coefficients. Inference can then be based on computationally efficient Markov chain Monte Carlo simulation techniques where a generic proceduremakes use of distribution-specific iteratively weighted least squares approximations to the full conditionals. We will discuss practical aspects of distributional regression along different applications concerning for example the analysis of income inequality in Germany.