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# Kolloquium über Mathematische Statistik und Stochastische Prozesse

## Prof. Dr. Enno Mammen

Professor für Mathematische Statistik, Universität Heidelberg

**24.06.2025, 16:15 Uhr, Geom Hörsaal H5**

# Estimation of Panel Models with Group Structures in Fixed Effects

**Abstract:**
In this talk we discuss panel models with unobserved individual effects. In this model parameters on time-varying covariates are identifiable and are consistently estimated by the classical fixed effects estimator. However parameters on the time-constant covariates are not identifiable. In this talk we present a new approach to clustering in this model to ensure identifiability. By using unsupervised nonparametric density-based clustering, cluster patterns including their location and number are adaptively determined. The approach works with large data structures. Our approach differs in two respects from the related literature. We allow for atoms, i. e. for units not belonging to a cluster and in our theoretical study we consider an asymptotic framework where the clusters are not consistently estimated in the limit. The performance of our method for large data sets is illustrated by simulations and an application to labour market data with 77,500 individuals and 620,000 person-year observations. The talk reports on joint work with Ralf A. Wilke (Copenhagen) and Kristina Zapp (Mannheim).

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