Einladung 
zum 
Mathematischen Kolloquium


Herr Prof. Dr. Davy Paindaveine
Université Libre de Bruxelles, Brüssel, Belgien
Gast am Lehrstuhl für Stochastik, bei Prof. Dr. Christmann

über das Thema

Multivariate quantiles and multiple-output regression quantiles: From $L_1$ optimization to halfspace depth

Abstract

A new multivariate concept of quantile, based on a directional version of Koenker and Bassett’s traditional regression quantiles, is introduced for multivariate location and multiple-output regression problems. In their empirical version, those quantiles can be computed efficiently via linear programming techniques. Consistency, Bahadur representation and asymptotic normality results are established. Most importantly, the contours generated by those quantiles are shown to coincide with the classical halfspace depth contours associated with the name of Tukey. This relation does not only allow for efficient depth contour computations by means of parametric linear programming, but also for transferring such asymptotic results as Bahadur representations from the quantile to the depth universe. Finally, linear programming duality opens the way to promising developments in depth-related multivariate rank-based inference.

Beginn: 16.30 Uhr (Kaffee/Tee ab 16.00 Uhr im Seminarraum 748)
Ort: Hörsaal H 19, Gebäude Naturwissenschaften II, Universitätsgelände