



Kolloquium über Mathematische Statistik und Stochastische Prozesse

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3.11.2015, 16:15 Uhr, Hörsaal 5

Weak convergence of the empirical copula process with respect to weighted metrics

Abstract:

The empirical copula process plays a central role in the asymptotic analysis of many statistical procedures which are based on copulas or ranks. Among other applications, results regarding its weak convergence can be used to develop asymptotic theory for estimators of dependence measures or copula densities, they allow to derive tests for stochastic independence or specific copula structures, or they may serve as a fundamental tool for the analysis of multivariate rank statistics.

This talk is concerned with weak convergence of the empirical copula process (for observations that are allowed to be serially dependent) with respect to weighted supremum distances. The usefulness of this result is illustrated by applications to general bivariate rank statistics and to estimation procedures for the Pickands dependence function arising in multivariate extreme-value theory.

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