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FAKULTÄT
FÜR MATHEMATIK, INFORMATIK
UND NATURWISSENSCHAFTEN
Fachbereich Mathematik

Kolloquium über Mathematische Statistik und Stochastische Prozesse

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Higher order approximation of the sequential empirical process

For time series with high temporal correlation, the empirical process converges rather slowly to its limiting distribution. Many statistics in change-point analysis, goodness-of-fit testing and uncertainty quantification admit a representation as functionals of the empirical process and therefore inherit its slow convergence. Inference based on the asymptotic distribution of those quantities becomes highly impacted by relatively small sample sizes.
We assess the quality of higher order approximations of the empirical process by deriving the asymptotic distribution of the corresponding error terms.

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