

# Empirical processes of dependent data

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In our talk we will present some new empirical process central limit theorems for stationary ergodic data under very weak conditions concerning the dependence structure of the underlying process  $(X_i)_{i \geq 1}$ . Our results apply to Markov chains and dynamical systems that have a spectral gap on a suitable Banach space of functions. As an application, we can e.g. establish the empirical process CLT for ergodic torus automorphisms. The proofs are based on an approximating class technique, originally developed by Dehling, Durieu and Volny (2009) for  $\mathbb{R}$ -valued random variables, and recently extended to empirical processes indexed by classes of functions by Dehling, Durieu and Tusche (2014).

## REFERENCES

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