

Institute for Applied Mathematics, Bonn University

Oberseminar Stochastik

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Lipschitz-Saal (LWK 1.016)

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Spectrum of noisy Toeplitz matrices

Toeplitz matrices form a very rich class of possibly non-normal matrices but whose high-dimensional spectral analysis is well understood. The spectra of these matrices are notoriously very sensitive to small perturbations. In this talk, we will see how to describe the spectrum of a banded Toeplitz matrix perturbed by a random matrix in the high-dimensional asymptotic. The proposed method is original, it relies in particular on a new multivariate CLT for traces of polynomials in random matrices and deterministic matrices. This is a work in progress and in collaboration with Mireille Capitaine and François Chapon.