

# AG Zufallsmatrizen

# Seminar

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## The level spacing distribution at the hard edge

The level spacing distribution in the bulk of a spectrum is approximately given by the Wigner surmise. Yet, at the hard and the soft edge one can expect strong deviations from these laws. Using the orthogonal polynomial method we derive the spacing distribution of the smallest two singular values of the chiral Gaussian unitary ensemble (chGUE) at finite matrix dimension with additional characteristic polynomials in the weight. The number of these polynomials represents the number of flavors (types of quarks) in the physical system. This ensemble approximates the Euclidean Dirac operator in Quantum Chromodynamics (QCD). In my talk, I will report on the behavior of the level spacing distribution in this particular setting.

**Wednesday, 28.11.2018, 16:15 Uhr**  
**V3-201**