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Maciej Zworski*, University of California Berkeley, Berkeley, CA. *Random perturbations in discrete quantization.*

A version of discrete quantization associates to functions on a $2n$ -dimensional torus a family of N^n -by- N^n matrices. The high energy limit then corresponds to N tending to infinity.

When the function (classical observable) is not real the matrices are typically not normal and the spectrum is very unstable. This comes from a reinterpretation of Hörmander's celebrated commutator condition.

However, small random perturbations produce spectra with a lot structure, in particular, satisfying probabilistic Weyl laws expressed using the classical observable.

In my talk I will explain all the concepts involved and illustrate the results and conjectures with simple numerical experiments (one great advantage of discrete quantization).

The talk is based on joint work with T. J. Christiansen and on earlier works of J. Sjöstrand and his collaborators. (Received May 05, 2009)