

Matrix Computations & Scientific Computing

Organizer(s): James Demmel, Ming Gu, and Beresford N. Parlett

Wednesday, 11:10 AM–noon, Soda 380

Sept 2 **Maciej Zworski**, UC Berkeley

Density of eigenvalues for small random perturbations of Berezin-Toeplitz matrices

For the Berezin-Toeplitz quantization of complex valued functions on a $2n$ -dimensional torus the expected number of eigenvalues of small random perturbations of a quantized observable satisfies a natural Weyl law, that is, a simple distribution law with density determined by the original function. In numerical experiments the same Weyl law also holds for “false” eigenvalues created by pseudospectral effects.

I will explain this well known quantization procedure which generalizes the usual Toeplitz matrix construction, present some simple numerical examples (and questions for numerical experts), and indicate the ideas behind the proof.

