

Kevin Schnelli

Title: Local laws for additive random matrix models

Abstract: Describing the eigenvalue distribution of the sum of two general Hermitian matrices is a basic question going back to Weyl. If the matrices have high dimensionality and are in general position in the sense that one of them is conjugated by a random Haar unitary matrix, the eigenvalue distribution of the sum is given by the free additive convolution of the respective spectral distributions. This result was obtained by Voiculescu on the macroscopic scale. In this talk, I show that it holds on the microscopic scale all the way down to the eigenvalue spacing in the bulk and at the regular edges. This shows a remarkable rigidity phenomenon for the eigenvalues. Joint work with Z.G. Bao and L. Erdos.