Mathematics, Statistics, and Computer Science **@ UIC**

Statistics Seminar

Propagation of critical behavior for unitary invariant plus GUE random matrices

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Abstract: It is a well known and celebrated fact that the eigenvalues of random Hermitian matrices from a unitary invariant ensemble form a determinantal point process with correlation kernel given in terms of a system of orthogonal polynomials on the real line. It is a much more recent result that the eigenvalues of the sum of such a random matrix with a matrix from the Gaussian unitary ensemble (GUE) also forms a determinantal point process, with the kernel given in terms of the Weierstrass transform of the original kernel. I'll talk about the case in which the limiting distribution of eigenvalues is critical in the sense that there is a non-generic scaling limit for the correlation kernel, and discuss the effect of a Gaussian perturbation on the limiting critical kernel. This is joint work with Tom Claeys, Arno Kuijlaars, and Dong Wang.

Wednesday, April 5 at 4:00 PM in SEO 636