Seminar/Talk

Local laws for polynomials of Wigner matrices

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Host: Laszlo Erdös

Under some numerically checkable conditions, we establish the optimal local law, i.e., we show that the empirical spectral distribution on scales just above the eigenvalue spacing follows the global density of states which is determined by free probability theory. First, we give a brief introduction to the linearization technique that allows to transform the polynomial model into a linear one, which has simpler correlation structure but higher dimension. After that we show that the local law holds up to the optimal scale for the generalized resolvent of the linearized model, which also yields the local law for polynomials. Finally, we show how the above results can be applied to prove the optimal bulk local law for two concrete families of polynomials: general quadratic forms in Wigner matrices and symmetrized products of independent matrices with i.i.d. entries.This is a joint work with Laszlo Erdös and Torben Krüger .

Tuesday, October 2, 2018 04:00pm - 06:00pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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