Mathematics and CS Seminar

Random matrices with slow correlation decay

Dominik Schröder
IST Austria

Host: Laszlo Erdös

We first present a short introduction to random matrix theory and its motivations from quantum physics. In the main part of the talk we review some recent results on the local eigenvalue statistics of various random matrix models generalising the classical Wigner random matrices with independent identically distributed zero mean entries. We demonstrate that the celebrated Wigner-Dyson-Mehta universality conjecture also extends to correlated random matrices with a finite polynomial decay of correlations and arbitrary expectation. Our proof relies on a quantitative stability analysis of the matrix Dyson equation (MDE) as well as on a systematic diagrammatic control of a multivariate cumulant expansion.

Tuesday, November 14, 2017 04:00pm - 06:00pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.