

Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

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Title: *Global asymptotic of particle systems at high temperature*

The eigenvalue distributions of random matrix ensembles often admit a generalization involving the “inverse temperature” parameter $\beta > 0$. We focus on two examples: the Hermite ensemble (eigenvalue distribution of GUE) and the spectra of sums of Hermitian random matrices. For both examples, we prove a Law of Large Numbers in the high temperature regime: the size of the system tends to infinity, while the inverse temperature β tends to zero. In our second example, we discover a new binary operation of probability measures, which interpolates between convolution and free additive convolution. The talk is based on joint work with Florent Benaych-Georges and Vadim Gorin.