



Seminar

Random Matrices

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Averaged characteristic polynomials in polynomial ensembles: determinantal formulas and universality

We consider a sub-class of probability measures within determinantal point processes called polynomial ensembles. Examples of such ensembles include products of independent random matrices, with applications to Lyapunov exponents, and random matrices with an external field, that may serve as schematic models of quantum field theories with temperature. We analyze expectation values of characteristic polynomials to obtain determinantal formulas for quantities such as the correlation kernel. This leads to the notion of invertibility in polynomial ensembles, which can be used to derive determinantal formulas only depending on the number of characteristic polynomials. The correlation kernels for two models, closely related to applications in effective field theory, are derived via these formulas for finite N . We perform large N asymptotic analysis of the two kernels and obtain universality results in form of Bessel-type kernels.

Wednesday, 08 July 2020, 0900 hrs CEST

Zoom Konferenzschaltung— Please contact Gernot Akemann
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