

The scaling limit of the Laguerre-Cauchy Matrix model and the Meijer-G random point field

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After recalling the definition of the Cauchy matrix model, we show a special case in which all correlation functions can be computed exactly in terms of special functions. This allows to address directly the scaling limit of the statistics of eigenvalues near the hard-edge, leading to a new coupled two-level random point field (a notion that I will define in the seminar). We conjecture that this random point field leads to a novel universality class of random fields parametrized by exponents of Laguerre weights. We show how to compute the statistics of the smallest eigenvalues in terms of suitable Fredholm determinants and also to compute them numerically.