

On the Second-Order Correlation Function of the Characteristic Polynomial of a Real Symmetric Wigner Matrix

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Abstract

We consider the asymptotic behaviour of the second-order correlation function of the characteristic polynomial of a real symmetric random matrix. Our main result is that the existing result for a random matrix from the Gaussian Orthogonal Ensemble, obtained by Brézin and Hikami (2001), essentially continues to hold for a general real symmetric Wigner matrix. To obtain this result, we adapt the approach by Götze and Kösters (2008), who proved the analogous result for the Hermitian case.

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