

On the Second-Order Correlation Function of the Characteristic Polynomials of the Non-Hermitian Random Matrices with Independent Entries

Ie. Afanasiev

arXiv:1902.09390

We consider the second correlation function of the characteristic polynomials of the Non-Hermitian random matrices which entries are independent identically distributed random variables with zero mean and unit variance. The study of the moments of the characteristic polynomials is motivated by the fact that their asymptotic behaviour and analysis are similar to that of the correlation functions of the eigenvalues. In the same time the analysis of the characteristic polynomials is much more simpler than that of the spectral correlation functions. Besides, the characteristic polynomials are of independent interest.

It is shown that the second correlation function of the characteristic polynomials behaves like that for Complex Ginibre Ensemble up to a factor depending only on the fourth absolute moment of the common probability law of the matrix entries.