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Logarithmically correlated fields in non-Hermitian random matrices

We prove that for matrices with i.i.d. entries the fluctuations of their eigenvalues converge to a 2D log-correlated field. We study the extremal value of this field and demonstrate its logarithmic dependence on the matrix dimension. I will then explain how a 3D log-correlated field naturally emerges from dynamics on non-Hermitian matrices.