

Universality for the Toda algorithm to compute the eigenvalues of a random matrix

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We prove universality for the fluctuations of the halting time $T(1)$ for the Toda algorithm to compute the eigenvalues of real symmetric and Hermitian matrices H . $T(1)$ controls the computation time for the largest eigenvalue of H to a prescribed tolerance. The proof relies on recent results on the statistics of the eigenvalues and eigenvectors of random matrices (such as delocalization, rigidity and edge universality) in a crucial way.

This is joint work with Tom Trogdon.

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