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Non-asymptotic results for singular values of Gaussian Matrix products.

This article concerns the non-asymptotic analysis of the singular values (and Lyapunov exponents) of Gaussian matrix products in the regime where N , the number of term in the product, is large and n , the size of the matrices, may be large or small and may depend on N . We obtain concentration estimates for sums of Lyapunov exponents, a quantitative rate of convergence of the empirical measure of singular values to the Triangle Law, and results on the joint normality of Lyapunov exponents when N is sufficiently large as a function of n . (Received August 16, 2020)