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Lyapunov spectral analysis of randomly coupled systems

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The collective dynamics of coupled units arranged on a random network exhibits complex dynamics ranging from synchronization to spatio-temporal chaos. It is often important to identify if perturbations spread across the network or are confined locally, in
the presence of quenched disorder. The spectrum of Lyapunov exponents, quantifying the sensitivity to perturbations, can be analyzed analogously to the spectrum of eigenvalues of a random matrix. Simple tools of Random Matrix Theory applied to the Lyapunov spectrum reveal
universal features and localization properties emergent from classical deterministic dynamics.

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