

SPECTRAL STABILITY UNDER RANDOM PERTURBATIONS

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In this talk I will discuss the following random matrix phenomenon (relevant in numerical diagonalization): if one adds independent (tiny) random variables to the entries of an arbitrary deterministic matrix A , with high probability, the resulting matrix A' will have (relatively) stable eigenvalues and eigenvectors. More concretely, I will explain the key ideas behind obtaining tail bounds for the eigenvector condition number and minimum eigenvalue gap of a deterministic matrix that has been perturbed by a (tiny) random matrix with independent entries, each having an absolutely continuous distribution.

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