Contribution ID: **34** Type: **not specified**

Physics of tridiagonal matrices

Friday 4 October 2024 11:00 (1 hour)

Eigenvalues of Hermitian matrices encapsulate the core statistical and dynamical characteristics of quantum systems. Typically, this involves diagonalizing the Hamiltonian, where the diagonal elements represent the eigenvalues of the Hamiltonian. In this talk, I introduce an alternative approach: tridiagonalizing the Hamiltonian. I will discuss the properties of the tridiagonal matrix elements, highlighting that both chaotic and integrable systems share certain features, yet exhibit distinct statistical behaviors in these elements. If time permits, I will also show how these properties can be extended to non-Hermitian systems through singular value decomposition.

Primary author: NANDY, Pratik (Riken & Kyoto University)

Presenter: NANDY, Pratik (Riken & Kyoto University)