



Theoretical Statistics and Mathematics Unit, Kolkata
INDIAN STATISTICAL INSTITUTE

SEMINAR

Date: February 21, 2025

Time: 04:15 PM

VENUE:

L - Infinity

(5th Floor, A.N. Kolmogorov Bhavan), ISI Kolkata

TITLE:

Fluctuations of Extreme Eigenvalues and Eigenvectors of certain Random Matrices

SPEAKER:

Bishakh Bhattacharya

Stat-Math Unit, ISI Kolkata

ABSTRACT:

The LSD of eigenvalues of random matrices with correlated entries, for e.g. coming from a stationary process has been studied in the literature. In this talk, we study the corresponding edge of the spectrum, i.e., the limiting behavior of the largest eigenvalue where the entries come from a stationary Gaussian process. We also talk about finite rank perturbations of Wigner matrices with independent normalized entry variables satisfying specific moment conditions. We will analyze the fluctuations of the largest eigenvalue of this perturbed matrix, as well as the asymptotic alignment of the corresponding normalized eigenvector. We also study the convergence of an Eigenvector process through a Sobolev space framework. These are ongoing joint works with Arijit Chakrabarty and Rajat Subhra Hazra.

ALL ARE CORDIALLY INVITED