INDIAN STATISTICAL INSTITUTE

Theoretical Statistics and Mathematics Unit, Kolkata

SEMINAR

Date: November 25, 2024
Time: 02:30 PM

VENUE:

L- Infinity

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

TITLE:

Some Large Deviation Problems Involving Moving Average Processes

SPEAKER:

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ABSTRACT:

The large deviation of the trace of the p-th power of Gaussian Wigner matrices has been studied explicitly. We shall equip a correlation structure to the entries. There are results on the convergence of the trace of its pth powers. We shall try to understand the large deviation of the square of this type of symmetric random matrices. The entries will behave like moving average processes in a special case. We shall try to study that. Also, we shall try to make sense of the concept of 'memory' of various types of moving average processes. We shall try to understand the clustering of rare events that arise, given that one such event has already occurred. In the long negative memory regime, we work in the framework of an infinite moving average process with a Gaussian noise with a covariance kernel described by a Polya-type characteristic function. We consider the first-time point when the event of interest does not occur. The asymptotic conditional distribution of the time point under appropriate scaling is studied.

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