



INDIAN STATISTICAL INSTITUTE

Theoretical Statistics and Mathematics Unit, Kolkata

SEMINAR

Date: November 29, 2023

Time: 02:10 PM

VENUE:

L-infinity

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

TITLE:

Conditional Large Deviations

SPEAKER:

Bodhisatta Das

Stat-Math Unit, ISI Kolkata

ABSTRACT:

The talk is on understanding the clustering of rare events that arise given that one such event occurs. In the long positive memory regime, we work in the framework of an infinite moving average process with suitably restricted noise variables. We consider the first-time point when the event of interest does not occur. The asymptotic conditional distribution of its appropriate scaled-down version is studied.

In the long negative memory regime, the infinite moving average process has Gaussian noise with the covariance kernel described by a Polya-type characteristic function. We consider the same stopping time again. The asymptotic conditional distribution of the scaled-up version of the said time point is studied.

We describe a few more problems. We want to study the huge deviation regime in the future. Using that we need a relaxation of the Gaussian assumption of the long negative memory regime. A problem involving random matrices will be discussed. As the order of a Wigner matrix, with Gaussian entries grows, the event that its largest Eigenvalue exceeds its order is a rare event. We want to study the distributions of various statistics arising from the matrix conditioned by the event.

ALL ARE CORDIALLY INVITED