



Theoretical Statistics and Mathematics Unit

Indian Statistical Institute

203 B.T. Road, Kolkata - 700108

SEMINAR

Date: July 27, 2026

Time: 04:15 PM

VENUE:

L-Infinity, 5th Floor, A.N. Kolmogorov Bhavan, ISI Kolkata

SPEAKER:

Manisha

IIT Bhilai

TITLE:

Generalized Counting Process: its Iterated, Multivariate and Time-Changed Variants

ABSTRACT:

The generalized counting process (GCP) is an extension of the Poisson process that allows jumps of sizes with positive rates. We introduce the iterated generalized counting process (IGCP) and its extensions, including compound, multivariate, and -iterated IGCPs. A time-changed IGCP, obtained via an inverse stable subordinator is studied showing long-range dependence in the process and short-range dependence in its increments. Then, we study multivariate GCP and its time-changed variants using stable, inverse stable, tempered stable, gamma subordinators, and related compositions. An application of the multivariate generalized space fractional counting process to shock models is discussed. Later, we extend Watanabe's martingale characterization for the Poisson process to GCP by establishing its unique representation as a weighted sum of independent Poisson processes. Also, we derive martingale characterizations for two time-changed variants of the GCP.

ALL ARE CORDIALLY INVITED

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