



Theoretical Statistics and Mathematics Unit

Indian Statistical Institute

203 B.T. Road, Kolkata - 700108

SEMINAR

Date: July 24, 2026

Time: 04:15 PM

VENUE:

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

SPEAKER:

Aritra Majumdar

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TITLE:

On the barycenter process of step reinforced random walks

ABSTRACT:

A step reinforced random walk (SRRW) is a generalization of the classical walk, which incorporates the memory of its previous steps to decide its current one. At every epoch, the walker chooses one of its past steps uniformly at random, then either repeats it with probability p or with probability $1-p$ takes a fresh step according to an independent innovation sequence. The walk has triggered recent attention among physicists, being a simple and useful model for studying systems which exhibit traits of anomalous diffusion. In particular, the walk is known to exhibit a phase transition from diffusive to superdiffusive behavior, based on the recollection probability p .

We consider a generalization of the SRRW where the memory is no longer distributed uniformly over the past, but proportional to a weight sequence, which is assumed to be regularly varying with index $\gamma > -1$. The model was introduced recently by Bertenghi and Laulin (2024). In this talk we investigate the barycenter process associated with the SRRW. Under appropriate assumptions on the innovations, we provide functional limit theorems for the barycenter process and study its limiting behavior for all values of p and γ .

Based on joint work with Dr. Krishanu Maulik.

ALL ARE CORDIALLY INVITED

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