Theoretical Statistics and Mathematics Unit, Kolkata
INDIAN STATISTICAL INSTITUTE

SEMINAR

Date: August 06, 2025
Time: 02:00 PM

MODE: Online
Meeting link: https://meet.google.com/ysf-wthd-czr

TITLE:

A Triangular Decomposition for the Crystal Lattice of Quantized Function Algebra

SPEAKER:

Saikat Das
Stat-Math Unit, ISI Delhi

ABSTRACT:

Given a compact simply-connected semisimple Lie group G with Lie algebra $\mathfrak{g}$, we'll begin with the Quantized Universal Enveloping algebra $U_{t}(\mathfrak{g})$ defined over $\mathbb{Q}(t)$ and its reduced dual Quantized Function algebra $\mathcal{O}_{t}(G)$. The results on triangular decompositions of $U_{t}(\mathfrak{g})$ and $\mathcal{O}_{t}(G)$ are there in the literature.

After briefly recalling the theory of crystal basis (due to Kashiwara) and the crystal lattice $\mathcal{O}_{t}^{A_0}(G)$ of $\mathcal{O}_{t}(G)$, we'll prove a triangular decomposition of $\mathcal{O}_{t}^{A_0}(G)$. This enables one to compare the notions of crystallizations due to Giri & Pal and Matassa & Yuncken.

This is based on work jointly with Ayan Dey and Arup K. Pal.

ALL ARE CORDIALLY INVITED