Theoretical Statistics and Mathematics Unit, Kolkata
INDIAN STATISTICAL INSTITUTE

SEMINAR

Date: February 20, 2026
Time: 12:00 Noon

VENUE:

L- Infinity

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

TITLE:

A decomposition theorem for the crystal lattice of the quantum coordinate ring

SPEAKER:

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ABSTRACT:

The crystal lattice \mathcal{O}_t^{A_0}(G) associated with the quantum coordinate ring \mathcal{O}_t(G) of a connected, simply connected complex Lie group G, was introduced by Kashiwara within the framework of crystal basis theory. I will start by reviewing the standard notions of crystal basis and global basis theory, respectively. Then I prove a decomposition theorem of \mathcal{O}_t^{A_0}(G) in terms of the crystal analogue of positive and negative Borel subalgebras of \mathcal{O}_{t}(G) over A_{0} for a large class of simple Lie groups G. If time permits, we will see how this decomposition theorem can be used to answer a question that Matassa-Yuncken conjectured in line with studying the crystal limit of compact semisimple quantum groups.

ALL ARE CORDIALLY INVITED