



INDIAN STATISTICAL INSTITUTE

Theoretical Statistics and Mathematics Unit, Kolkata

SEMINAR

Date: November 12, 2024

Time: 04:30 PM

VENUE:

L- infinity

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

TITLE:

Regularity and pointwise convergence of solutions of the Schrodinger operator with radial initial data on Damek-Ricci spaces

SPEAKER:

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ABSTRACT:

One of the most celebrated problems in Euclidean Harmonic analysis is the Carleson's problem: determining the optimal regularity of the initial condition f of the Schrödinger equation given by

$$\begin{cases} i\frac{\partial u}{\partial t} = \Delta u, (x, t) \in \mathbb{R}^n \times \mathbb{R}, \\ \lim_{t \rightarrow 0^+} \|u(\cdot, t) - f\|_{L^2(\mathbb{R}^n)} = 0, \end{cases}$$

in terms of the index α such that f belongs to the inhomogeneous Sobolev space $H^\alpha(\mathbb{R}^n)$, so that the solution of the Schrödinger operator u converges pointwise to f , $\lim_{t \rightarrow 0^+} u(x, t) = f(x)$, almost everywhere. In this talk, we consider the Carleson's problem for the Schrödinger equation with radial initial data on Damek-Ricci spaces and obtain the sharp bound up to the endpoint $\alpha \geq 1/4$, which agrees with the classical Euclidean case.

ALL ARE CORDIALLY INVITED