



INDIAN STATISTICAL INSTITUTE

Theoretical Statistics and Mathematics Unit, Kolkata

Thesis Proposal Seminar

Date: November 10, 2023, Friday
Time: 02:00 PM

VENUE:

L-infinity

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

TITLE:

Thom Spectrum, Topological Hochschild Homology (THH) and
Topological coHochschild Homology (coTHH)

SPEAKER:

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ABSTRACT:

Many important spectra arise as Thom spectra, for example classical Bordism spectra (MO , MSO , MU , $MSpin$ and others) can be realized as Thom spectra. On the other hand, Topological Hochschild Homology (THH) comes as a good approximation of Algebraic K-Theory. THH of these Thom spectra can be identified as a Thom spectrum of a certain stable bundle over free loop space, leading to calculations of THH of a large class of ring spectra. Moreover, THH of based loop space of a simply connected space gives free loop space, thus it becomes important from a String Topology point of view too. On the other hand Topological coHochschild Homology (coTHH) of coalgebra spectrum is the topological analogue of coHochschild Homology of coalgebra, and coTHH of suspension spectrum of simply-connected spaces gives rise to free loop space; relating it to THH, K-theory and String Topology. There is also duality relation between them; which in light of Atiyah Duality becomes important for compact Lie Groups for example. In this talk, we shall talk about these aspects and look at problems related to them.

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