INDIAN STATISTICAL INSTITUTE

Theoretical Statistics and Mathematics Unit, Kolkata

SEMINAR

Date: July 18, 2023, Tuesday
Time: 02:30 PM

VENUE:

L-infinity

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

TITLE:

Atiyah Real Adams Conjecture

SPEAKER:

Prasit Bhattacharya

University of New Mexico

ABSTRACT:

Adams conjecture says that, up to a homotopy, the n-th Adams operations on topological K-theory is invisible to the J-homomorphism localized away from n. This conjecture is consequential in homotopy theory and has many important applications, and therefore, it was among the most important open problems during the sixties. The Adams conjecture was resolved almost after a decade since its formulation independently by Sullivan and Quillen. The conjecture is true for both real and complex K-theory.

Atiyah Real K-theory is essentially complex K-theory equipped with an involution compatible with the complex conjugation. If we forget the involution we recover the complex K-theory, and if we take the fixed points, we recover the real K-theory. Therefore, one may ask if there exists an equivariant null-homotopy which simultaneously solves the real and the complex Adams conjecture.

In this talk, I will demonstrate that the answer to the above question is "yes". Consequently, we will identify new elements in the C_2-equivariant stable stems and estimate the James periodicity of Atiyah Real line bundles.

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