Theoretical Statistics and Mathematics Unit, Kolkata
INDIAN STATISTICAL INSTITUTE

SEMINAR

Date: November 18, 2025
Time: 12:00 PM

VENUE:

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

TITLE:

Existence of unimodular elements of a projective module

SPEAKER:

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ABSTRACT:

Let A be an affine algebra over $\overline{\mathbb{F}} p$ such that $\dim(A)=d.$ Assume that $d\ge 3$ and n is an integer satisfying $2n\ge d+2$. In [BD], the n-th Euler class group $E^n(A)$ has been defined. Further, if A is smooth and if P is a 1-stably free module of rank n, then the Euler class of P is defined and it is proved that the Euler class of P is trivial if and only if P has a unimodular element. We generalize this result to accommodate any stably free module of rank n.

The second part of this talk deals with the d-th Euler class group of $R[T]$, where R is a commutative Noetherian ring of dimension d. In [D1], the d-th Euler class group of $R[T]$ was defined under the assumption that ${\mathbb Q}\subset R$ and it was shown that the Euler class of a projective $R[T]$-module P of rank d is the precise obstruction for P to have a unimodular element. We remove the assumption ${\mathbb Q}\subset R$ and replace it with $(d-1)!\in R^{\ast}$. This is a work in progress.

ALL ARE CORDIALLY INVITED