



Theoretical Statistics and Mathematics Unit, Kolkata
INDIAN STATISTICAL INSTITUTE

SEMINAR

Date: November 14, 2025
Time: 04:00 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 $d \geq 3$ and n is an integer satisfying $2n \geq d+2$. 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.

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