Theoretical Statistics and Mathematics Unit, Kolkata
INDIAN STATISTICAL INSTITUTE

Thesis Proposal Seminar

Date: May 29, 2025
Time: 03:30 PM

VENUE:

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

TITLE:

On Generalised Danielewski Surfaces Over Fields Of Arbitrary Characteristic

SPEAKER:

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ABSTRACT:

Complex surfaces of the form $\frac{\mathbb{C}[X,Y,Z]}{(X^nY-Z^2+1)}$ were first introduced by W. Danielewski in 1989 to provide counter examples to the Cancellation Problem. With passage of time various generalizations of these surfaces have been studied over a field K including surfaces of the form $\frac{K[X,Y,Z]}{(X^nY-\varphi(X,Z))}$, which are now known as Danielewski Surfaces.

In 2016, Bianchi and Veloso undertook the study of more general surfaces of the form

$$\frac{K[X,Y,Z]}{(f(X)Y-\varphi(X,Z))}$$

where K is an **algebraically closed** field of characteristic **zero**. They calculated certain invariants of these surfaces, and using these invariants they characterized isomorphism classes in a subfamily consisting of surfaces of the form $\frac{K[X,Y,Z]}{(f(X)Y-\varphi(Z))}$.

In this talk we shall see results on surfaces of the form $\frac{K[X,Y,Z]}{(f(X)Y-\varphi(X,Z))}$, over any field K of arbitrary characteristic. In particular we will characterize isomorphisms between these surfaces and will show that this family of surfaces contains a subfamily that provides new counterexamples to the Cancellation Problem.

ALL ARE CORDIALLY INVITED