School of Mathematics
Tata Institute of Fundamental Research

19 January, 2023

Algebraic Geometry Preprint Seminar

Speaker	:	*Najmuddin Fakhruddin*
Affiliation	:	*TIFR, Mumbai*
Title	:	*Geometric local systems on generic curves*
Date & Time	:	*Wednesday, 25 January, 2023 at 4.00 p.m.*
Venue	:	**Lecture Room (AG-77)**

Abstract

The talk will be based on parts of the preprint entitled "Geometric local systems on very general curves and isomonodromy" by Aaron Landesman and Daniel Litt (arXiv:2022.00039).

A complex local system L on a smooth projective curve X over $\mathbb{C}$ is said to be "geometric" if there exists a smooth projective morphism $f : X \to U$, with U a nonempty Zariski open subset of X, and an integer i such that $L|_U$ is a direct summand of $R^i f_* \mathbb{C}_X$. The main result that we will discuss says that if the rank of L is small compared to the genus of X, then the monodromy representation associated to L must have finite image; this leads to counterexamples to conjectures of Budur–Wang and Esnault–Kerz.The proof uses methods from the theory of variations of Hodge structure.

Milind Pilankar