



17 April, 2023

Ph.D. Thesis Defense

Speaker : *Rijul Saini*
Title : *Rational curves on $K3$ surfaces and incompressibility of Galois covers*
Date & Time : *Thursday, 20 April, 2023 at 10.00 a.m.*
Venue : *Through Zoom*

Abstract

This talk will be divided into two parts. In the first part, let \mathfrak{B}_g denote the moduli space of primitively polarized $K3$ surfaces (S, H) of genus g over \mathbb{C} . It is well-known that \mathfrak{B}_g is irreducible and that there are only finitely many rational curves in $|H|$ for any primitively polarized $K3$ surface (S, H) . We prove that the monodromy group of these rational curves is the full symmetric group for $g = 3$ and $g = 4$.

In the second part, we develop a method for proving p -incompressibility and apply it to prove the p -incompressibility for a certain class of unitary Shimura varieties, and using related methods we also make progress towards a conjecture of P. Brosnan on the p -incompressibility of the multiplication by p map $[p] : A \rightarrow A$, where A is an abelian variety over a field of characteristic zero.

Milind Pilankar

Zoom Link and Credentials

<https://tifr-res-in.zoom.us/j/93241983718>

Meeting ID: 932 4198 3718

Passcode: 945780
