

GRADUATE STUDENT SEMINAR

Guest Speaker: Xiyang Zhong
University of Notre Dame

Date: Tuesday, February 27, 2024

Time: 4:00 PM

Location: 258 Hurley Bldg

Zoom URL: NA



Lecture Title:

Prym representations and twisted cohomology of the mapping class group with level structures.

Abstract

For a finite cyclic cover S_p of a non-closed surface S of finite type, the whole mapping class group of S does not lift to the cover S_p . However, there is a finite-index subgroup which does lift to the cover and act on the first rational cohomology group of S_p , and this is called a Prym representation. We computed the twisted cohomology of this subgroup in coefficients r -tensor powers of $H^1(S_p; \mathbb{Q})$, which turns out to be unstable with respect to the genus of the surface when $r \geq 2$, contrasting to the stability of cohomology of the whole mapping class groups. As a corollary, we also know the Prym representations of finite abelian covers are locally rigid. Arxiv: <http://arxiv.org/abs/2401.13869>