

CMi Mathematics Colloquium

October 18, 2023

Stiefel-Whitney Classes for Representations of Finite Symplectic Groups

Neha Malik

Orthogonal representations π of a finite group G have cohomological invariants $w_i(\pi)$ living in the i th degree cohomology group $H^i(G, \mathbb{Z}/2\mathbb{Z})$, called Stiefel-Whitney Classes (SWCs).

There are not many explicit calculations in the literature on characteristic classes for the non-abelian groups. We have computed SWCs for several finite groups of Lie type in terms of character values at diagonal involutions. This talk will begin with a brief introduction to these classes, followed by an overview of our results for finite symplectic groups $Sp(2n, q)$ when q is odd. We will also discuss a Nakaoka-type result which, in a sense, conveys that the cohomology of $Sp(2n, q)$ stabilizes.

The talk is based on a joint work with Prof. Steven Spallone.