Department of Mathematics
University of Notre Dame

TOPOLOGY SEMINAR

Guest Speaker: Nir Gadish

University of Michigan

Date: Monday, September 11, 2023
Time: 12:00 PM
Location: 258 Hurley Hall
Zoom Link: NA

Lecture Title:
Letter-braiding invariants of words in groups

Abstract

How can one tell if a group element is a k-fold commutator? A computable invariant of words in groups that does not vanish on k-fold commutators will help. For free groups this is achieved by Fox calculus, whose geometric applications include Milnor invariants of links, and there are generalizations for braid groups and RAAGs, but beyond that little is known. We introduce a complete collection of such invariants for any group, using (higher) linking numbers of letters in words due to Monroe and Sinha. One consequence of this theory is a dual version of the Johnson homomorphism, defined for automorphisms of arbitrary groups.

Nir Gadish - University of Michigan