

Topology Seminar

Cary Malkiewich

of Binghamton University will be speaking on

Higher scissors congruence

on March 31 at 4:30 in
MIT Room 2-131

Scissors congruence is the study of polytopes, up to the relation of cutting into finitely many pieces and rearranging the pieces. In the 2010s, Zakharevich defined a “higher” version of scissors congruence, where we don’t just ask whether two polytopes are scissors congruent, but also how many scissors congruences there are from one polytope to another.

Zakharevich’s definition is a form of algebraic K-theory, which is famously difficult to compute, but I will discuss a surprising result that makes the computation of the higher K-groups possible, at least for low-dimensional geometries. In particular, this gives the homology of the group of interval exchange transformations, and a new proof of Szymik and Wahl’s theorem that Thompson’s group V is acyclic. Much of this talk is based on joint work with Anna-Marie Bohmann, Teena Gerhardt, Mona Merling, and Inna Zakharevich, and also with Alexander Kupers, Ezekiel Lemann, Jeremy Miller, and Robin Sroka.

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