

TOPOLOGY SEMINAR

Guest Speaker: Becky Eastham

University of Wisconsin

Date: Tuesday, January 30, 2024

Time: 2:30 PM

Location: 258 Hurley Bldg

Zoom Link: NA



Lecture Title:

Separable homology of graphs and the Whitehead complex

Abstract

We introduce a 1-complex associated with a finite regular cover of the rose and show that it is connected if and only if the fundamental group of the associated cover is generated by elements in a proper free factor of the free group. When the associated cover represents a characteristic subgroup of the free group, the complex admits an action of $\text{Out}(F_n)$ by isometries. We then explore the coarse geometry of the 1-complex, showing that every component has infinite diameter, and that the 1-complex associated with the rose is nonhyperbolic. As corollaries, we obtain that the Cayley graph of the free group with the infinite generating set consisting of all primitive elements has infinite diameter and is nonhyperbolic.