

Algebra/Topology Seminar

LORENZO RUFFONI

Tufts University

THE RAAG-RECOGNITION PROBLEM FOR BESTVINA–BRADY GROUPS

Thursday, September 14, 2023

3:00 p.m. in BB-B012

ABSTRACT. The right-angled Artin group (RAAG) on a graph is the group generated by the vertices, and in which two generators commute if and only if the corresponding vertices are adjacent. Vice versa, when one is given a group in which all relators are commutators, it is natural to ask if it is secretly isomorphic to the RAAG on some graph. Bridson has shown that this “RAAG-recognition problem” is in general undecidable.

In this talk I will consider the problem for the class of Bestvina–Brady groups (BBGs). Every RAAG is a BBG, and I will describe a criterion to certify when a BBG is not a RAAG. This is based on a description of the BNS-invariant of a BBG, and provides a complete solution to the RAAG-recognition problem in dimension 2. This is joint work with Y.-C. Chang.