

TOPOLOGY SEMINAR

Guest Speaker: Ethan Dlugie

Brown University

Date: Tuesday, April 28, 2026

Time: 2:15 PM

Location: 258 Hurley Hall

Zoom Link: NA



Lecture Title:

Truncated braid groups and Platonic solids

Abstract

In the 1950s, Coxeter considered the quotients of braid groups given by adding the relation that all half Dehn twist generators have some fixed, finite order. He found a remarkable formula for the order of these groups in terms of some related Platonic solids. Despite the inspiring apparent connection between these topological and geometric objects, Coxeter's proof boils down to a finite case check that doesn't shed much light on the structure present. I'll explain joint work with Tahsin Saffat that gives an interpretation of the truncated 3-strand braid group that makes the connection with Platonic solids clear. We use down-to-earth geometric and algebraic topological tools, including a formalization of orbifolds that allows for an easier formal treatment of such objects.