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Department of Mathematics and Computer Science

Colloquium

Gluck Twisting 2-Spheres

Hannah Schwartz (Princeton)

Abstract:

The smooth, generalized Poincaré conjecture – that all smooth homotopy spheres are diffeomorphic to the standard one – remains unknown only in dimension four. In this talk, we will examine homotopy 4-spheres called "Gluck twists" obtained by the operation of "Gluck twisting" embedded 2-spheres in S^4. Although this operation was defined by Gluck in the 60's, many Gluck twists are still not known to be standard. We will discuss a variety of distinct viewpoints from which to understand the diffeomorphism type of Gluck twists, including joint work with several different combinations of the collaborators Gabai, Naylor, Joseph, Ruppik, and Klug.

4 – 5pm, Wednesday, March 29, 2023

Room 204, Smith Hall