

1163-51-754

Khanh Le* (khanh.q.le@temple.edu) and **Rebekah Palmer**. *Totally geodesic surfaces in twist knot complements.*

The study of surfaces has been essential in studying the geometry and topology of the 3-manifolds that contain them. In particular, there has been considerable work in understanding the existence of totally geodesic surfaces in hyperbolic 3-manifolds. Most recently, Bader, Fisher, Miller, and Stover showed that having infinitely many maximal totally geodesic surfaces implies that the 3-manifold is arithmetic. In a joint work with Rebekah Palmer, we present examples of infinitely many non-commensurable (non-arithmetic) hyperbolic 3-manifolds that contain exactly k totally geodesic surfaces for every positive integer k . In this talk, I will discuss some ideas in the proof of the main results. I will also talk about applications of these ideas in showing that a family of twist knot complements is not right-angled and examples of maximal Fuchsian subgroups of infinite covolume in hyperbolic 3-manifolds. (Received September 12, 2020)