

Meeting: 999, Nashville, Tennessee, SS 10A, Special Session on Geometry of Hyperbolic Manifolds

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Colin C Adams* (Colin.Adams@williams.edu), Bronfman Science Center, Williams College, Williamstown, MA 01267, and **Hanna Bennett, Christopher Davis, Michael Jennings, Jennifer Novak, Nicholas Perry** and **Eric Schoenfeld**. *Totally Geodesic Surfaces in Hyperbolic Knot and Link Complements*.

In recent work of Adams and Schoenfeld, it was demonstrated that certain hyperbolic knots possess totally geodesic Seifert surfaces. We generalize these results, finding large classes of hyperbolic knot and link complements, each possessing a totally geodesic Seifert surface that is the lift of a rigid 2-orbifold embedded in the hyperbolic complement of a collection of arcs and knots in some spherical 3-orbifold. In addition, we address questions of uniqueness and utilize the width invariant to show that many knots and links cannot possess a totally geodesic Seifert surface. Finally, we utilize these examples to demonstrate that the Six Theorem is sharp for knot complements in the 3-sphere. (Received August 20, 2004)