Department of Mathematical Sciences Colloquium

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ON 2-UNIVERSAL KNOTS AND UNIVERSAL GROUPS GENERATED BY HALF-ROTATIONS

There are many techniques to construct orientable 3-manifolds; a very useful one involves branched coverings. In 1982, W, Thurston gave the first example of a universal link - a link $L \subset S^3$ is universal if every connected orientable 3-manifold occurs as a covering of the three sphere branched along *L*- and asked whether universal knots exist. In 1983, Hilden, Lozano and Montesinos answered Thurston's question in the affirmative. Since then many examples of universal knots have been given. It was until 1997 that Lozano and Montesinos introduced the concept of 2-universal links (a refinement of the definition of universal knots which is closely related to certain type of Kleinian groups), and gave several examples of such links. They were very interested in finding hyperbolic 2-universal knots. In 2004, Hilden, Lozano and Montesinos proved the existence of 2-universal knots but provided no examples.

In this talk we will construct a 2-universal link and a hyperbolic 2-universal knot and discuss some geometric implications.

Friday, January 29, 2010 at 3 pm in Bell Hall 143 The University of Texas at El Paso

Refreshments will be served in front of the colloquium room, 15 minutes before the start of the colloquium.