Pure Mathematics Seminar

Square Root Problems

Dr. Matthew Haulmark
Vanderbilt University

In 2000 Kapovich and Kleiner proved that if G is a one-ended hyperbolic group that does not split over a two-ended subgroup, then the boundary of G is either a Menger curve, a Sierpinski carpet, or a circle. Kim Ruane observed that there were no known non-hyperbolic examples of groups with Menger curve boundary, and asked if there was a CAT(0) generalization of Kapovich and Kleiner's theorem. As boundaries of CAT(0) groups are in general not locally connected, there is no hope of such a generalization for all CAT(0) groups. However, a version of Kapovich and Kleine's theorem may hold for certain classes of CAT(0) groups. In this talk I will discuss a generalization of the Kapovich-Kleiner theorem for CAT(0) groups with isolated flats, and provide an example of a non-hyperbolic CAT(0) group with Menger curve boundary. I will also introduce some basic notions in geometric group theory: δ-hyperbolic spaces, CAT(0) spaces, CAT(0) groups, and boundaries of groups.

Date: **Friday, March 2, 2018**
Time: **12:00 pm**
Place: **Edinburg:** EMAGC 1.410, **Brownsville:** BLIBR 2.206

The talk will delivered live at the *Brownsville* campus and will be streamed to the Edinburg campus

Coffee will be served.

For further information or for special accommodations, please contact Dr. Sergey Grigorian via email at [sergey.grigorian@utrgv.edu], or Dr. Alexey Garber at [alexey.garber@utrgv.edu], or visit the webpage http://www.utrgv.edu/math/news-events/seminars/puremath/index.htm