

## Graduate Geometry, Topology and Dynamics Seminar

### *New Density Bounds and Optimal Ball Packings for Hyperbolic Space*

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**Abstract:** We consider ball packings of hyperbolic space, motivating the discussion with recent developments in three dimensions. We then show that it is possible to exceed the conjectured 4-dimensional packing density upper bound due to L. Fejes-Tóth (Regular Figures, 1964). We give several examples of horoball packing configurations that yield higher densities of  $\approx 0.71$  where horoballs are centered at the ideal vertices of certain Coxeter simplex tilings.

Wednesday, September 9 at 3:00 PM in SEO 612