

Department of Mathematical Sciences
Faculty and Graduate Research Colloquium

“Dimensions, mappings and groups”

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1:00-1:50 PM, RB 449

Abstract:

Dimension is one of the most fundamental ways to measure the topological and geometric properties of a space. Understanding how a dimension is preserved or distorted under various mappings has long been a central object of study. While topological dimension captures the local, small-scale structure of a space and is preserved under homeomorphisms, the notion of Nagata dimension is simultaneously sensitive to both fine and coarse geometric features of a metric space.

In this talk, we discuss how various planar maps interact with this notion of dimension, with an emphasis on when Nagata dimension is preserved. We also see how Nagata dimension appears in geometric group theory, where it provides a useful coarse invariant for distinguishing and classifying certain groups.

This is joint work with Jeremy Tyson.