

Department of Mathematical Sciences
Sabbatical Presentation

“Factorization and approximation of homeomorphisms”

Dr. Guy David

Ball State University

Thursday, January 30, 2025

1:00-1:50pm in room RB 450

Abstract:

A bi-Lipschitz homeomorphism is a mapping that preserves all distances up to a constant factor, called the "distortion". A long-standing open question asks whether it is possible to factor every bi-Lipschitz homeomorphism into mappings of small distortion. This is also connected to open problems in topology about approximation by piecewise linear homeomorphisms. In the talk, I'll try to describe these problems in a down-to-earth way. Then I'll explain some work completed during my leave that solves these problems "away from a small set" and quantitatively, in a precise sense. The new work is joint with Matthew Romney and Raanan Schul.