TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

Monday, February 20, 2017, 2:40 p.m.

Differentiability and rectifiability on metric planes

by Guy C. David

Courant Institute, NYU

Abstract: Since the work of Cheeger, many non-smooth metric measure spaces are now known to support a differentiable structure for Lipschitz functions. The talk will discuss this structure on metric measure spaces with quantitative topological control: specifically, spaces whose blowups are topological planes. We show that any differentiable structure on such a space is at most 2-dimensional, and furthermore that if it is 2-dimensional the space is 2-rectifiable. This is partial progress on a question of Kleiner and Schioppa, and is joint work with Bruce Kleiner.