Department of Mathematics
University of Notre Dame

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TOPOLOGY SEMINAR

Guest Speaker: Larry Taylor

University of Notre Dame

Date: Tuesday, September 5, 2023
Time: 2:30 PM
Location: 258 Hurley Hall
Zoom Link: NA

Lecture Title:
Riemannian Borsuk-Ulam Theorem

Abstract

The usual Borsuk-Ulam Theorem says that given a map $f\colon S^n \to \mathbb{R}^n$, there exists a pair of antipodal points x, $-x$ such that $f(x) = f(-x)$. Less precisely, one could say there exist two points "far apart" with the same f-value. In Riemannian geometry there is a notion of "far apart". In a Riemannian manifold M^n, two points are "far apart" if one is on the cut-locus of the other. A weak version of the Riemannian Borsuk-Ulam Theorem says that if $f\colon M^n \to \mathbb{R}^n$ is a map with M a closed, compact, smooth Riemannian n-dimensional manifold, then there are two points x, y in M with x in the cut-locus of y and with $f(x) = f(y)$.