

TOPOLOGY SEMINAR

Guest Speaker: Robin Koytcheff

University of Louisiana

Date: Tuesday, November 15, 2022

Time: 2:15 PM

Location: 117 Hayes-Healy Hall

Zoom Link: NA



Lecture Title:

Graphing, homotopy groups of spheres, and spaces of links and knots

Abstract

We show that the lowest homotopy groups of spaces of long links are given by homotopy groups of spheres in a range of degrees that depends on the dimensions of the source manifolds and target manifold. In one degree higher, joining components sends both a parametrized long Borromean rings class and a class coming from the Hopf fibration to a generator of the first nontrivial homotopy group of the space of long knots. For spaces of two-component long links of dimension at least two, we show that this homotopy group is generated by classes from the Borromean rings and homotopy groups of spheres. A key ingredient in most of the results is a graphing map that increases source and target dimensions by one. Our calculations concern the second and third stages of the Taylor tower of these spaces of embeddings.