UNIVERSITY AT ALBANY
State University of New York

College of Arts and Sciences
Department of Mathematics and Statistics

Algebra/Topology Seminar

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Periodic Orbits and Topological Restriction Homology

Thursday, October 5, 2017
1:15 p.m. in ES-143

Abstract. I will talk about a project to import trace methods, usually reserved for algebraic K-theory computations, into the study of periodic orbits of continuous dynamical systems (and vice-versa). Our main result so far is that a certain fixed-point invariant built using equivariant spectra can be "unwound" into a more classical invariant that detects periodic orbits. As a simple consequence, periodic-point problems (i.e., finding a homotopy of a continuous map that removes its n-periodic orbits) can be reduced to equivariant fixed-point problems. This answers a conjecture of Klein and Williams, and allows us to interpret their invariant as a class in topological restriction homology (TR), coinciding with a class defined earlier in the thesis of Iwashita and separately by Lück. This is joint work with Kate Ponto.