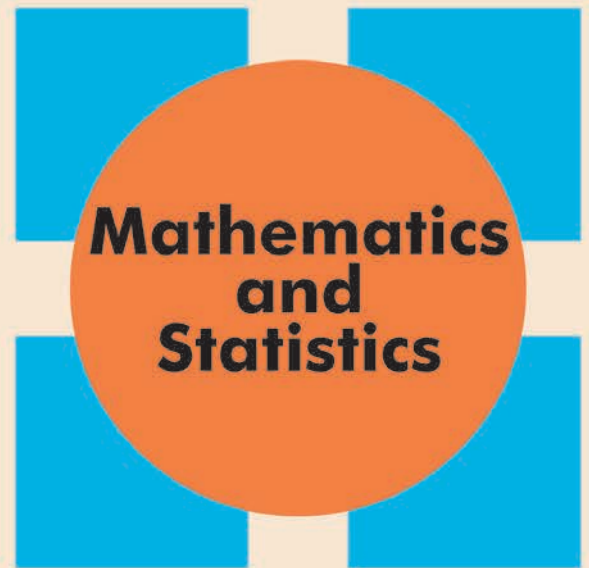


# COLLOQUIUM

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## Orbit Class, Equivariant LS-Category, and Equivariant Topological Complexity



Date: Wednesday, April 20, 2016

Time: 3:30 - 4:30 PM

Room: CL 431

**Abstract:** In this talk we introduce a new concept to study topological spaces endowed with an action of a topological group. We call this concept *orbit class* and is often a good replacement for the well-known concept *orbit type*. We define a partial ordering on the set of all orbit classes. This partial order not only gives a partition on the topological space based on the orbits, but it also gives a discrete combinatorial translation of the topological space.

Further, we use the properties of the orbit class to study the equivariant LS-category and show some new results found by applying the properties of orbit class. We also study both the equivariant topological complexity and the invariant topological complexity, and show that in most cases the invariant topological complexity is infinite. We also give counterexamples to two theorems from a published paper by Colman and Grant, and prove a modified version of one of those theorems.