
MARZIEH BAYEH, University of Ottawa
Higher Equivariant and Invariant Topological Complexities

The topological complexity was introduced by Farber to estimate the complexity of the configuration space of a robot or a mechanical system.

Later, Rudyak introduced a series of invariants $\{TC_n(X)\}$, called the higher topological complexity, which is related to a motion planning algorithm with n points as the input (in addition to the initial and terminal states of the robot, some intermediate states are given as well).

If the configuration space admits an action of a topological group G (for example having a symmetry on the mechanical system or its configuration space), then it is worth considering a motion planning algorithm that is compatible with the action. There are different approaches to define an equivariant version of topological complexity.

In this talk we will consider two of those approaches and discuss a generalization of each invariant in the realm of higher topological complexity.