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Higher Equivariant Topological Complexity

Topological complexity was introduced by Farber in 2003 to estimate the complexity of a motion planning algorithm. Topological complexity of a space X , denoted by $TC(X)$, is the least number of open sets that form a covering for $X \times X$ in which each open set admits a section to the endpoints map $\pi : PX \rightarrow X \times X$, where $PX = X^I$ is the path space of X .

In 2010, Rudyak introduced a series of invariants $\{TC_n(X)\}_n$ and called them higher topological complexity. These invariants can be considered as generalizations of the topological complexity.

In this talk, we study an equivariant version of the higher topological complexity for a topological space which admits an action of a topological group. We consider the diagonal action on $X \times X$ and show some properties of the higher equivariant topological complexity.