Topological Complexity: A product formula

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Abstract. In 2003, Michael Farber introduced the notion of topological complexity \( TC(X) \) for the motion planning problem in robotics. In his words this non-negative integer \( TC(X) \) measures discontinuity of the process of motion planning in the configuration space \( X \). Very rapidly one notices that it is in fact a homotopy invariant which can be very effectively studied using tools developed for the computation of another homotopy invariant: the Lusternik-Schnirelmann category of a space \( X \).

In this talk, we will give a small survey of recent results. Moreover, while working over the rational numbers we will exhibit new computational examples (joint work with my student Gabrielle Poirier) and give a product formula for an approximation to \( TC(X) \).

* Refreshments at 2:15 PM in RT 1517