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**Title**: Motion planning in tori.

Abstract: Let $X$ be a path-connected topological space. Viewing $X$ as the space of configurations of a mechanical system, the motion planning problem from robotics consists of constructing an algorithm which takes as input pairs of configurations $(A, B)$ in $X \times X$, and produces a continuous path in $X$ from the initial configuration $A$ to the terminal configuration $B$. For most spaces $X$, it is not possible to construct a globally continuous motion planning algorithm. So one divides the product space $X \times X$ into "local domains" over which the motion planning problem can be solved continuously. The minimal number of local domains required is called the topological complexity of $X$. We compute this number for several natural subcomplexes of the $n$-dimensional torus.

This is joint work with G. Pruidze.