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Jesús González, Bárbara Gutiérrez, Aldo Guzmán, Cristhian Hidber, María Mendoza, Christopher Roque (Vol. 19 No. 1 2015)

Motion planning in tori revisited
Jesús González, Bárbara Gutiérrez, Aldo Guzmán,
Cristhian Hidber, María Mendoza, Christopher Roque

The topological complexity (TC) of the complement of a complex hyperplane arrangement, which is either linear generic or else affine in general position, has been computed by Yuzvinsky. This is accomplished by noticing that efficient homotopy models for such spaces are given by skeletons of Cartesian powers of circles. Soon after, Cohen and Pruidze noticed that the topological complexity of the complement of the corresponding redundant subspace arrangement, as well as of right-angled Artin groups, can be obtained by considering general subcomplexes of cartesian powers of higher dimensional spheres. Unfortunately Cohen-Pruidze's TC-calculations are flawed, and our work describes and mends the problems in order to validate the extended applications. In addition, we generalize Farber-Cohen's computation of the topological complexity of oriented surfaces, now to the realm of Rudyak's higher topological complexity.

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