Meeting: 1004, Bowling Green, Kentucky, SS 14A, Special Session on Geometric Topology and Group Theory

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Topological complexity and motion planning in certain real Grassmannains.

Let $TC(X)$ denote the topological complexity of a path-connected topological space X. We first give a lower bound on $TC(G_k(\mathbb{R}^m))$, the Grassmannian of real k-planes in $\mathbb{R}^m$. We then compute $TC(G_k(\mathbb{R}^m))$ for $(k, m) = (2, 4)$ and relate it to the motion planning problem of topological robotics. (Received January 20, 2005)