On Construction of locally standard $\mathbb{Z}_2$-torus actions on Manifolds

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Abstract

For a closed manifold M^n with a locally standard $(\mathbb{Z}_2)^m$ action, the action information can be interpreted as a $(\mathbb{Z}_2)^m$-coloring on a nice manifold with corners V^n, where V^n is constructed from Q^n by cutting along a system of submanifolds. And up to equivariant homeomorphisms, we can recover M^n by a standard glue-back construction from V^n and the $(\mathbb{Z}_2)^m$-coloring. Then the classification of closed n-manifolds with locally standard $(\mathbb{Z}_2)^m$-actions up to (weak) equivariant homeomorphisms will be studied. In addition, some topological information of M^n can be read directly from the $(\mathbb{Z}_2)^m$-coloring on V^n.

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