About manifolds supporting singular $\mathbb{R}^k$-actions

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Let N a closed and orientable n-manifold and ϕ be a smooth $\mathbb{R}^k$-action on N with $n \geq k + 1$. which is the topological type of the manifold that supports this action?

In this poster we study and proved and the following results.

Theorem: If N be a closed, connected and orientable n-manifold, $n \geq 3$, with a C^2 action of $\mathbb{R}^{n-1}$. Assume that the set K of singular orbits is non-empty, finite and the orbit of $p \in K$ has topological dimension strictly less than $n - 1$. Then:

1. K contains only one orbit

2. N is homeomorphic to S^n

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