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Cyclic Group Actions on Contractible Four-Manifolds

There are known infinite families of Brieskorn homology 3-spheres which can be realized as boundaries of smooth contractible 4-manifolds. Kwasik and Lawson found examples where the free periodic action on these Brieskorn spheres extend locally linearly to the contractible 4-manifold with one fixed point, but no such action exists smoothly. In this talk we give some background to this problem and discuss a new infinite family of examples. This is joint work with Ian Hambleton.