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Nima Anvari* (anvarin@math.mcmaster.ca), Hamilton, Ontario , Canada. *Equivariant Gauge Theory and the Poincaré Homology Sphere.*

The Brieskorn homology 3-spheres bound canonical smooth definite 4-manifolds obtained by plumbing disk bundles over 2-spheres. We will show that certain free cyclic group actions on the Poincaré homology sphere do not extend smoothly, with isolated fixed points, to its even negative definite resolution. We use equivariant Yang-Mills moduli spaces and discuss applications to equivariant splitting of 4-manifolds. (Received January 19, 2015)