

1121-55-88

Chen He* (he.chen@husky.neu.edu). *Classification and equivariant cohomology of circle actions on 3d manifolds*. Preliminary report.

The classification of Seifert manifolds was given in terms of numeric data by Seifert in 1933, and then generalized by Orlik and Raymond in 1968 to circle actions on closed 3d manifolds. In this paper, we further generalize the classification to circle actions on 3d manifolds with boundaries by adding a numeric parameter and a union of cycle graphs. Then we describe the equivariant cohomology of 3d manifolds with circle actions in terms of ring, module and vector-space structures. We also compute equivariant Betti numbers and Poincaré series for these manifolds and discuss the equivariant formality. (Received July 12, 2016)