

Cohomological rigidity of 6-dimensional quasitoric manifolds

Seonjeong Park

A quasitoric manifold is a closed smooth manifold with a locally standard torus action for which the orbit space is identified with a simple polytope. We say that a family of closed smooth manifolds are cohomologically rigid if a cohomology ring isomorphism $H^*(M) \cong H^*(M')$ implies a diffeomorphism $M \cong M'$ for any two manifolds in the family. In this talk, we present some recent results on cohomological rigidity for the family of 6-dimensional quasitoric manifolds whose corresponding simple polytopes are flag and do not have 4-belts. We also deal with the small covers defined by flag simple 3-polytopes without 4-belts. This talk is based on a joint work with Buchstaber, Erokhovets, Masuda, and Panov.