

ON PROJECTIVE BUNDLES OVER SMALL COVERS

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A small cover M is an n -dimensional manifold with locally standard n -dimensional real torus action whose orbit space is a simple polytope. For example, the real projective space is such space. In 2008, Masuda found counter examples of cohomological rigidity of small covers, that is, the cohomology ring can not distinguish homeomorphism types of small covers. In order to find counter examples, he used projective bundles over real projective spaces. So we are naturally led to study homeomorphism types of projective bundles over every small cover. In this talk, we give some characterization of projective bundles over small covers. This is a joint work with Zhi Lü.

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