

1054-55-100

Laura Scull* (scull_l@fortlewis.edu), Department of Mathematics, Fort Lewis College, 1000 Rim Drive, Durango, CO 81301, and **Dorette Pronk**. *Orbifolds and Equivariant Homotopy Theory*.

An orbifold is called representable if it can be presented as the orbit space of a manifold by the action of a compact Lie group. A large class of orbifolds is known to be representable. In this talk we will discuss generalizing results of equivariant homotopy theory to obtain orbifold homotopy invariants for representable orbifolds. .

Orbifolds can be represented by smooth étale groupoids where two such groupoids represent the same orbifold if and only if they are Morita equivalent. An orbifold is representable precisely when it can be represented by a smooth translation groupoid. This means that any generalization of constructions for G -spaces need to be invariant under Morita equivalence.

We have examined the notion of Morita equivalence in the context of translation groupoids, and used our results to give a more concrete method for deciding when equivariant results apply in the orbifold setting. We will discuss these results and their applications. (Received September 08, 2009)