

# ISOMETRIES BETWEEN QUOTIENT SPACES

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Given an isometric action of a compact Lie group on a Riemannian manifold, the quotient space has a natural singular quotient metric and a generalized smooth structure, containing the information about all smooth invariants of the action. The simple-minded question whether isometries between such quotient spaces are smooth, seems to be non-trivial and interesting for applications. In my talk, I will discuss this and related questions and provide some partial answers.