

# GEOMETRIC RESOLUTIONS OF ISOMETRIC ACTIONS

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In the talk I will present several results about isometric actions of Lie groups on Riemannian manifolds, and, more generally, about singular Riemannian foliations. The main result describes isometric actions that admit a resolution preserving the transverse metric. It turns out that these are precisely infinitesimally polar actions, i.e., actions all of whose isotropy representations are polar. This is a large class of actions including all polar actions, all actions of cohomogeneity  $\leq 2$  and all variationally complete actions.

We obtain description of all actions whose quotient spaces are Riemannian orbifolds, good Riemannian orbifolds or Riemannian orbifolds without conjugate points. The last case provides a complete description of variationally complete actions. Using a special resolution we obtain several topological regularity results for infinitesimally polar actions. All results are proven in the more general context of singular Riemannian foliations.