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Title: Equivariant Implicit function theorem with low regularity and applications to geometrical variational problems

ABSTRACT: In the talk we present an implicit function theorem for functions on infinite dimensional Banach manifolds, invariant by the action of a finite dimensional Lie group. Motivated by some geometric variational problems, where the group does not act differentiably, we will consider group actions that are not necessarily differentiable everywhere, but only on some dense subset. Applications are discussed in the context of closed (pseudo-)Riemannian geodesics, constant mean curvature hypersurfaces of Riemannian manifolds, and harmonic maps.