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Summary: The systematic study of harmonic self-maps on cohomogeneity one manifolds has recently been initiated by Püttmann and the second named author in [19]. In this article we investigate the corresponding Jacobi equation describing the equivariant stability of such harmonic self-maps. Besides several general statements concerning their equivariant stability we explicitly solve the Jacobi equation for some harmonic self-maps in the cases of spheres, special orthogonal groups and $SU(3)$. In particular, we show by an explicit calculation that for specific cohomogeneity one actions on the sphere the identity map is equivariantly stable.

MSC:
58E20 Harmonic maps, etc.
53Cxx Global differential geometry
37Cxx Smooth dynamical systems: general theory

Keywords:
harmonic self-map; cohomogeneity one manifold; equivariant stability

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References: