

Year: 2007	Vol.: 71	Fasc.: 1-2
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Title: Isometric actions of compact connected Lie groups on globally hyperbolic Lorentz manifolds

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Let G be a compact connected Lie group acting isometrically on a globally hyperbolic Lorentz manifold L . We will show that there are no isolated singular orbits in L . We will also show that if there is an orbit of co-dimension 1 then every orbit is principal moreover L is diffeomorphic to $G/G_x \times (\alpha, \beta)$ where $x \in L$ is arbitrary and G_x is the isotropy subgroup of x , and $\alpha, \beta \in \mathbb{R} \cup \{\pm\infty\}$ furthermore every orbit is a Cauchy hypersurface. Moreover a Lorentzian analogue of a theorem of J. Szenthe is given, namely we prove that: If L and G are as above and $G(x)$ is a principal orbit for which along the causal rays orthogonal to $G(x)$ a curvature property holds, then the singular orbits in the causal future of $G(x)$ correspond to first focal points along some causal geodesics orthogonal to $G(x)$. Finally the correspondence between the singular orbits and the focal points of maximal dimensional orbits is considered in a special situation.

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