CLOSED GEODESICS AND GEOMETRY OF COMPACT LORENTZIAN MANIFOLD THAT HAVE A TIMELIKE KILLING VECTOR FIELD

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We will discuss some properties of the isometry group of compact Lorentzian manifolds that admit a Killing vector field which is timelike at some point. We will show the existence of closed geodesics and characterize the topology of these manifolds in terms of S^1-actions.

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