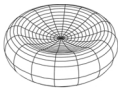
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SOME PHYSICAL PROPERTIES OF SASAKIAN QUASI-KILLING SPINORS IN THREE-DIMENSIONS

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A Sasakian quasi-Killing spinor (SqK-spinor), which is a generalization of a Killing spinor on Sasakian manifolds, have been defined some time ago.
The purpose of this paper is to study in detail SqK-spinors on three-dimensional pseudo-Riemannian Sasakian space-forms. We briefly review some results on SqK-spinors and then investigate some geometric properties. We show that the Reeb vector field and the motion of a charged particle in a contact Maxwell field are described by SqK-spinors. Most SqK-spinors solve the Einstein-Dirac system with a cosmological constant, and some also provide solutions to the Einstein-Dirac-Maxwell system.

MSC: 53Z05
Keywords: Einstein-Dirac-Maxwell system, Sasakian three manifold, Sasakian quasi-Killing spinor

Contents

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