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Spinor Field in Cosmology with Lyra's Geometry

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Abstract. We have studied the evolution of space-time with nonlinear spinor field in the framework of Lyra's geometry. The role of a nonlinear spinor field in the evolution of Universe was identified. Earlier we have considered the nonlinear spinor field in isotropic and anisotropic cosmological models and found that the presence of nontrivial non-diagonal terms in energy-momentum tensor imposes different type of restrictions both on space-time geometry and spinor field itself. The introduction of Lyra's geometry leads to the complex dependence of invariants of bilinear spinor forms.

Keywords: spinor field; cosmology; Lyra's Geometry

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