

Interactions between Weyl Graviton and Massless Spin-3/2 Particles. No-go Results

C. Bizdadea, E. M. Cioroianu, I. Negru, S. C. Sararu

Faculty of Physics, University of Craiova

13 A. I. Cuza Str., Craiova 200585, Romania

bizdadea@central.ucv.ro manache@central.ucv.ro inegru@central.ucv.ro

scsararu@central.ucv.ro

Abstract

The cross-couplings between one Weyl graviton [described in the free limit by the linearized Weyl actions] and various type of massless spinor-vectors are studied with the help of the deformation theory based on local BRST cohomology. Under the hypotheses of locality, analyticity of the interactions in the coupling constant, Poincaré invariance, (background) Lorentz invariance, and the preservation of the number of derivatives on each field, we prove that there are no consistent cross-interactions one Weyl graviton and a massless spin-3/2 particle.

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