Iranian Journal of Physics Research, Vol. 23, No. 2, 2023
DOI: 10.47176/ijpr.23.2.31665

Group theoretic approach to calculate the ξ- pseudo Dirac operator and its spectrum on AdS^2

M Mahmoodi, M Lotfizadeh, and B Mohammadi
Department of Physics, Urmia University, Urmia, Iran

E-mail: m.lotfizadeh@urmia.ac.ir

(Received 25 March 2023 ; in final form 10 July 2023)

Abstract
ξ-pseudo Dirac operator has recently been constructed with the help of ξ-pseudo modules and appropriate projectors on AdS^2 space. In this article, this operator will be constructed with the help of group theory. For this purpose, firstly, the spin structure of AdS^2 space is built and then,with the help of relations related to right and left actions and Maurer-Cartan forms, ξ- pseudo Dirac operator and then its scalar form in, instanton and non-instanton mode is introduced will be and at the end its spectrum is also calculated in different states of this ξ-pseudo operator.
Keywords: ξ - pseudo Dirac operator, ξ - pseudo chirality operator, spinor bundle, gauge fields, spectrum

For full article, refer to the Persian section