Orissa Journal of Physics
ISSN 0974-8202

Vol. 24, No.1
February 2017
pp. 143-153

Planck scale effect in a supersymmetric E_6 model

S MISHRA and S MOHANTY

Department of Physics, Berhampur University,
Berhampur-760007, Odisha, India.
E-mail:-mishrasnigdha60@gmail.com

Abstract. We propose a Supersymmetric E_6 model with intermediate Left-right symmetry as a result of spontaneous compactification of E_8 theory in a ten dimensional space. We show that much lower value of Left-right symmetry breaking scale and consistent unification scale can be achieved by gravity induced correction mediated by spontaneous compactification of higher dimensions at the Planck scale. In the model we could successfully lower the intermediate Left-right symmetry breaking scale M_R up to 10^4 GeV. With such a lower value of M_R, we can easily accommodate low scale leptogenesis specifically the resonant leptogenesis in tune with gravitino constraint. The model can also predict desired value of neutrino mass that can be tested at LHC.

Keywords: Exceptional groups, Renormalization group equation, Supersymmetry.

PACS numbers: 11.10.Hi, 11.15.Ex, 12.60.Jv.

[Full Paper]