

DISCRETE 2014: Fourth Symposium on Prospects in the Physics of Discrete Symmetries



Contribution ID: 57

Type: **not specified**

Tree level Baryogenesis through Leptogenesis from Kalb-Ramond Torsion Background

Friday, 5 December 2014 17:25 (30 minutes)

We consider a model of an expanding Universe in string theory that yields CPT violation for fermions, in the sense of different dispersion relations for fermions and antifermions. These are induced by a cosmological background with constant torsion provided by the Kalb–Ramond antisymmetric tensor field (axion) of the string gravitational multiplet. This effect induces different densities of neutrinos and antineutrinos while in chemical equilibrium, offering new scenarios for leptogenesis and baryogenesis even in the absence of CP violation. Leptogenesis effects are visible at tree level and are discussed.

Primary author: SARKAR, sarben (King's College London)

Co-authors: DE CESARE, Marco (King's College London); Prof. MAVROMATOS, Nikos (University of London (GB))

Presenter: SARKAR, sarben (King's College London)

Session Classification: Parallel 8: Early universe Physics (Inflation, Lepto(Baryo)genesis)