



Contribution ID: 100

Type: not specified

SUSY SO(10) with Yukawa unification and light sparticles

Wednesday 1 June 2011 18:15 (15 minutes)

We investigate supersymmetric SO(10) GUT model with $\mu < 0$. The requirements of top-bottom-tau Yukawa unification, correct radiative electroweak symmetry breaking and agreement with the present experimental data may be met when the soft masses of scalars and gauginos are non-universal. We show how appropriate non-universalities can easily be obtained in the SO(10) GUT broken to the Standard Model. In many supersymmetric models it is quite difficult to have values of $\text{BR}(b \rightarrow s\gamma)$ and $(g - 2)_\mu$ simultaneously in good agreement with the experimental data. We discuss how such agreement can be achieved in our model with $\mu < 0$. In the region of the parameter space preferred by our analysis there are two main mechanisms leading to the LSP relic abundance consistent with the WMAP results. One is the coannihilation with the stau and the second is the resonant annihilation via exchange of the Z boson or the light Higgs scalar. A very interesting feature of SO(10) models with negative μ is that they typically predict sparticle spectra much lighter than in models with positive μ .

Author: OLECHOWSKI, Marek (University of Warsaw)

Presenter: OLECHOWSKI, Marek (University of Warsaw)

Session Classification: P10 - SUSY, SEESAW & GUTS