Stop Decays With R-Parity Violation and the Neutrino Mass

Marco Aurelio Díaz

Abstract

The atmospheric and solar neutrino problems can be explained in a supersymmetric scenario where R-parity is broken bilinearly. Within this context we explore the decays of the top squark. We find that the R_p violating decay $\tilde{t}_1 \rightarrow b\tau$ can easily dominate over the R_p conserving decay $\tilde{t}_1 \rightarrow c\tilde{\chi}_1^0$ and sometimes also over the decay $\tilde{t}_1 \rightarrow b\tilde{\chi}_1^+$. We study the implications of non-universal boundary conditions at the GUT scale.