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Phenomenology of Neutralino-Stop Coannihilation considering SUSY-QCD Corrections

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After the discovery of a 125 GeV Higgs boson, light stop scenarios are strongly motivated. With currently having only weak constraints from the LHC for almost degenerate neutralino and stop masses, supersymmetry could still hide in this corner.

In this region of the MSSM parameter space, neutralino-stop coannihilation can also play an important role in order to meet the experimentally determined value for the dark matter relic density. For this reason, we have calculated the full next-to-leading order SUSY-QCD corrections to neutralino-stop coannihilation and have studied their effect on the relic density.

We will show that the impact of these corrections is larger than current experimental uncertainties and that they are important for a first uncertainty estimation. Taking into account these corrections, more precise exclusion limits on the MSSM parameter space can be set.

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