

Relic density of wino-like dark matter in the MSSM

Wednesday 30 September 2015 14:00 (15 minutes)

We will discuss the relic density of TeV-scale wino-like neutralino dark matter in the pMSSM. We have recently developed a framework enabling us to compute the Sommerfeld enhanced relic density in general pMSSM scenarios.

We will present the results of a thorough investigation of certain regions of parameter space, focusing in particular on departures from the well known pure wino scenario: namely the effect of sfermion masses and allowing higgsino or bino components of the LSP. The results reveal a number of phenomenologically interesting but so far unexplored regions of parameter space. Near the resonance in the Sommerfeld enhancement, the combined effect of non-decoupled sfermions and significant higgsino-wino mixing allows regions with both the correct relic density and the potential for sizeable indirect detection rates.

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