



Contribution ID: 132

Type: **not specified**

## A Singlet Extension of the MSSM with a Dark Matter Portal

*Monday 6 May 2013 17:00 (15 minutes)*

The minimal extension of the MSSM (NMSSM) has been widely studied in the search for a natural solution to the  $\mu$  problem. In this work, we consider a variation of the NMSSM where an extra singlet is added and a Peccei-Quinn symmetry is imposed. We study its neutralino sector and compute the annihilation of the lightest neutralino. We use existent cosmological and collider data to constrain the parameter space and find that the lightest neutralino turns out to be very light and a good candidate for dark matter.

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**Session Classification:** DM I