



CERN Joint EP/PP Seminars

SPEAKER: Joanne L. Hewett (SLAC/Stanford)
TITLE: **Supersymmetry Without Prejudice**
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ABSTRACT

We begin an exploration of the physics associated with the general CP-conserving MSSM with Minimal Flavor Violation, the pMSSM. The 19 soft SUSY breaking parameters in this scenario are chosen so as to satisfy all existing experimental and theoretical constraints assuming that the WIMP is a conventional thermal relic, ie, the lightest neutralino. We scan this parameter space twice using both flat and log priors for the soft SUSY breaking mass parameters and compare the results which yield similar conclusions. Detailed constraints from both LEP and the Tevatron searches play a particularly important role in obtaining our final model samples.

We find that the pMSSM leads to a much broader set of predictions for the properties of the SUSY partners as well as for a number of experimental observables than those found in any of the conventional SUSY breaking scenarios such as mSUGRA. This set of models can easily lead to atypical expectations for SUSY signals at the LHC.