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Explored and Unexplored MSSM Signatures

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The R-parity conserving minimal supersymmetric Standard Model (MSSM) is a possible description of nature that is motivated by its providing a natural explanation for the hierarchy problem and a possible account of cosmic dark matter. The vastness of the full model space of the MSSM, which spans over 100 dimensions, has motivated the interpretation of CMS results in terms of a proxy model for the MSSM called the phenomenological (p)MSSM. The pMSSM captures most of the LHC-relevant features of the MSSM while reducing the number of parameters down to a tractable 19. I will present results from this analysis, including how CMS has impacted our understanding of the pMSSM, and touch on signatures that are predicted to become accessible in the upcoming 13 TeV run.

Primary author: BEIN, Samuel Louis (Florida State University (US))

Presenter: BEIN, Samuel Louis (Florida State University (US))

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