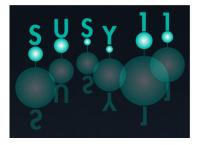Contribution ID: **84**   Type: **not specified**

Cosmological Connection of SUSY Models at the LHC

Monday, 29 August 2011 11:15 (20 minutes)

Once SUSY is discovered, attempts will be made to establish the SUSY models from the cascade decays of squarks and gluinos. We have developed a model independent Bi-Event Subtraction Technique (BEST) as a method of modeling and subtraction of large portions of the combinatoric background which arises during reconstruction of particle decay chains at the LHC. The combinatoric background arises because it is impossible to know experimentally which observable particles come from the decay chain of interest. The combinatoric background modeled by BEST can then be subtracted away, greatly reducing the overall background. This technique can be applied towards two goals of hadron colliders: To improve our understanding of the Standard Model backgrounds and to search for new physics beyond the Standard Model. Using this technique, in this talk I will show how to reconstruct SUGRA models, Mirage mediation models etc. Based on the determined values of the model parameters, the dark matter content will be calculated and compared with the experimental results to establish cosmological connection of SUSY models.

Summary

This talk is based on the following works: Phys.Rev. D82 (2010) 115009, arXiv:1104.2508 [hep-ph] and a paper to appear.

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