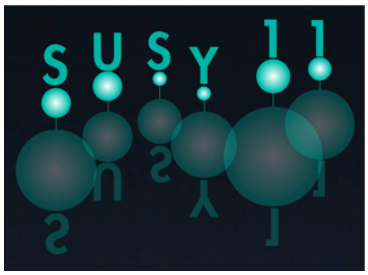

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Resolving Combinatorical Ambiguities at Hadron Colliders with MT_2

Sunday, 28 August 2011 12:10 (25 minutes)

We present a method to resolve combinatorial issues in multi-particle final state at hadron colliders. The use of kinematic variables such as MT2 and invariant masses significantly reduces combinatorial ambiguities in signal but at a cost of losing statistics. We illustrate the idea with a pair of gluinos which leads to 4-jets + $\not{E}$ T signal, and apply the same idea to the t-tbar dilepton system to resolve two-fold ambiguity in finding the correct combination of a b-jet and a lepton. Our method provides much larger efficiency with similar purity compared to results in recent studies.

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