

Abstract Submitted  
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**Low-Energy Tau Identification for Probing SUSY-Cosmology at the LHC**<sup>1</sup> PAUL SIMEON, RICHARD ARNOWITT, BHASKAR DUTTA, ALFREDO GURROLA, TERUKI KAMON, Texas A & M University, NIKOLAY KOLEV, University of Regina, ABRAM KRISLOCK, Texas A & M University — For probing supersymmetric cosmology at the LHC, both ATLAS and CMS experiments will have to identify tau leptons with a transverse energy above 20 GeV. The experimental first step before such SUSY search program is to observe tau-lepton pair from Z boson decay. This observation will guarantee the quality of the tau lepton identification (ID) at the LHC experiments. In order to design the tau ID, we study the hadronic decays of tau leptons in the Z bosons in the LHC environment using PYTHIA and TAUOLA Monte Carlo programs. Our preliminary study shows that the one-prong hadronic decay is most suitable for maximizing tau ID efficiency and minimizing misidentified taus.

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Paul Simeon  
Texas A & M University

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