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Dark Matter Relic Density and Supersymmetry at the LHC JONATHAN ASAADI, Texas A&M University — The theory of Supersymmetry (SUSY) could provide a fundamental link between early Big Bang cosmology and particle physics by providing a possible explanation to the origin and abundances of the Dark Matter. WMAP measurements, in addition to other experimental results, help constrain the SUSY parameter space to a region known as the co-annihilation region where the stau and the neutralino (LSP) are nearly the same mass (mass difference $\sim$ 5-15GeV). We present one approach to extracting information about the Dark Matter candidate at the LHC in addition to the different parameters of the minimal Supergravity (mSUGRA) model of SUSY.

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