

Abstract Submitted
for the DNP08 Meeting of
The American Physical Society

Probing 23% of the Universe at the Large Hadron Collider¹ WILL FLANAGAN, University of Colorado, Texas A&M Cyclotron REU, TEXAS A&M HIGH ENERGY PHYSICS TEAM — With recent astronomical measurements, we know that 23% of the Universe is composed of dark matter, whose origin is unknown. Supersymmetry (SUSY), a leading theory in physics, provides us with a cold dark matter candidate, the lightest supersymmetric particle (LSP). SUSY particles, including the LSP, can be created at Large Hadron Collider (LHC) at CERN. We perform a systematic study to characterize the SUSY signals in the “focus point” region, one of a few cosmologically-allowed regions in our SUSY model. We also present a methodology for extracting the dark matter signals at the LHC, and show the accuracy to which we can measure the dark matter relic density and the SUSY parameters.

¹Many thanks to the Texas A&M Cyclotron REU and the Texas A&M HEP Group.

Will Flanagan
University of Colorado, Texas A&M Cyclotron REU

Date submitted: 01 Aug 2008

Electronic form version 1.4