



LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS (LEPP)

Joint Experimental and Theory Seminar in Particle Physics and Cosmology

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CERN

Search for Compressed SUSY using Soft Leptons with the ATLAS Detector



The data collected and analyzed at the LHC experiments in recent years has put constraints on many natural SUSY models. But SUSY still lives! One well-motivated scenario is the case where the lightest SUSY particle is predominantly Higgsino-like, resulting in small ("compressed") mass splittings between the neutralinos. These compressed scenarios allow for final states with a unique signature containing soft leptons, large missing energy, and a distinctive dilepton invariant mass endpoint. However, they also pose many experimental challenges for ATLAS--particularly for triggering, particle identification, and background estimation. I will discuss these challenges and how they were overcome to allow ATLAS to set the first limits on direct Higgsino production since the LEP experiments.



**Wednesday,
Aug. 15, 2018
2:00pm**



301 Physical Sciences Bldg.