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## Search for Chargino and Neutralino Production in Final States with Three Leptons and Missing Transverse Momentum with the ATLAS detector in $20.3 \text{ fb}^{-1}$ of $\sqrt{s} = 8 \text{ TeV}$ pp collisions

*Tuesday 17 June 2014 15:00 (15 minutes)*

The Standard Model (SM) of particle physics provides a theoretical framework to understand fundamental particle interactions. Despite its extraordinary success, the SM leaves a number of open questions: What is the nature of Dark Matter? Why is the SM Higgs boson so light? Supersymmetry (SUSY) is an extension of the SM of particle physics which predicts a super-partner for each of the SM particles which differs by one-half unit of spin. In R-parity conserving SUSY models, the lightest supersymmetric particle (LSP) is stable, neutral and weakly interacting, providing a promising candidate to explain Dark Matter. In addition, SUSY provides a solution to the Hierarchy problem of the SM and allows for the unification of forces at the GUT scale.

This talk focuses on a search for the direct production of charginos and neutralinos in final states with three leptons and missing transverse momentum. No excess above SM predictions was observed. Limits are set in the context of simplified models and R-parity conserving phenomenological Minimal Supersymmetric Standard Models.

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