

Abstract Submitted
for the APR11 Meeting of
The American Physical Society

$\mathbf{H}^\pm \rightarrow \chi^\pm \chi^0 \rightarrow \mathbf{3}\ell + \mathbf{E}_T^{\text{miss}}$ **Searches** CALEB LAMPEN, University of Arizona, ATLAS COLLABORATION — In some supersymmetric (SUSY) models, a charged Higgs boson (\mathbf{H}^\pm) can decay into a chargino-neutralino ($\chi_i^\pm \chi_j^0$) pair producing a final state containing three leptons (electron/muon) and missing transverse energy ($3\ell + \cancel{E}_T$). Such a decay could provide extra sensitivity to the \mathbf{H}^\pm in the region of SUSY parameter space near $\tan\beta = 7$, where the \mathbf{H}^\pm Standard Model decays have reduced significance. We present a signature search on early ATLAS data, setting an exclusion limit on an excess of $3\ell + \cancel{E}_T$ events over the Standard Model background. Such an excess could be evidence of generic SUSY, the $\mathbf{H}^\pm \rightarrow \chi_i^\pm \chi_j^0$ decay, or both.

Caleb Lampen
University of Arizona

Date submitted: 13 Jan 2011

Electronic form version 1.4