

Abstract Submitted  
for the APR10 Meeting of  
The American Physical Society

**Measurement of Missing Transverse Energy using the ATLAS Detector at the Large Hadron Collider** ADAM YURKEWICZ, SUNY Stony Brook, ATLAS COLLABORATION — An important experimental signature for many physics processes to be studied with the ATLAS detector at the Large Hadron Collider (LHC) is missing transverse energy,  $E_T^{Miss}$ . The energy carried away by weakly or non-interacting particles such as neutrinos produced in particle collisions is inferred from an imbalance in the vector sum of energy measured transverse to the proton beam axis, the  $E_T^{Miss}$ . Many theories predict the production of new neutral, stable, and weakly interacting particles in LHC collisions. A signature of such a particle's production would be  $E_T^{Miss}$ . In this talk, the design of the ATLAS  $E_T^{Miss}$  reconstruction software algorithms will be presented, along with performance studies using simulated and cosmic-ray data collected by the ATLAS detector.

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Date submitted: 22 Oct 2009

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