

**Stony Brook University  
The Graduate School**

Doctoral Defense Announcement

**Abstract**

Search for Supersymmetry in States with Large Missing Transverse Momentum and  
Three Leptons including a Z-boson

By

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I present a search for supersymmetric particle production requiring 3 leptons (e or  $\mu$ ) and missing transverse momentum greater than 50 GeV. Two of the leptons are required to have the same flavor but opposite charge with an invariant mass within 10 GeV of the Z-boson mass. The dataset consists of  $\sqrt{s} = 7$  TeV proton-proton collisions with an integrated luminosity of  $2.06 \text{ fb}^{-1}$  collected at the ATLAS detector of the Large Hadron Collider during the 2011 operations. There were 95 events observed in data and  $72 \pm 15$  were expected. An upper limit of 26.1 fb is set on the visible cross section for processes beyond the standard model at 95% confidence level. Exclusion intervals are set on the parameter space of General Gauge Mediated supersymmetry.

**Date:** April 17, 2012

**Time:** 12:30

**Place:** Physics Building, D-128

**Program:** Physics

**Dissertation Advisor:** Robert McCarthy