

Abstract Submitted
for the APR12 Meeting of
The American Physical Society

Simultaneous cross-section measurements of SM $e\mu$ final state processes at ATLAS KEVIN FINELLI, Duke University, ATLAS COLLABORATION — We present a method for the simultaneous extraction of Standard Model (SM) processes using the $e\mu$ dilepton final state. In a 2-D phase space defined by missing transverse energy and jet multiplicity the main SM contributions of $t\bar{t}$, WW , and $Z \rightarrow \tau\tau$ are well separated. After selecting $e\mu$ events, and making no further requirements on the events, we fit the data to templates of the three aforementioned processes, the normalizations of which are allowed to float, and smaller contributions which are constrained to their uncertainties. The result of the likelihood fit provides the simultaneous measurement of the $t\bar{t}$, WW , and $Z \rightarrow \tau\tau$ cross-sections, as well as providing a more global test of the SM as compared to a more conventional cross-section measurement. We present results from $5fb^{-1}$ of data collected by the ATLAS detector.

Mark Kruse
Duke University

Date submitted: 05 Jan 2012

Electronic form version 1.4