Abstract Submitted
for the APR13 Meeting of
The American Physical Society

Semi-leptonic ZZ/ZW Diboson Final State Measurement and Search at 8 TeV with ATLAS SAMUEL MEEHAN[1], The University of Chicago
— Using data collected at a center of mass energy of 8 TeV with the ATLAS detector, an investigation has been made of the semi-leptonic decay channel involving ZZ and ZW boson pairs in which there is a leptonic $Z \to \ell^+\ell^-$ decay in the final state. Processes involving pairs of bosons in the final state play an important role in a wide range of measurements and searches at the LHC. They allow for precision tests of the electroweak sector of the standard model, provide benchmark measurements necessary for Higgs search channels, and allow for new physics searches including Technicolor, supersymmetry, and models with extra dimensions. Furthermore, the semi-leptonic final state, in which there is a high-p_T W or Z decaying hadronically, offers a valuable test of jet substructure techniques that are becoming increasingly important to searches at the LHC. This talk presents a search for the standard model semi-leptonic ZZ/ZW diboson signal, as well as a complimentary search for high mass diboson resonances interpreted in terms of bulk Randall-Sundrum Gravitons decaying to pairs of Z bosons and using techniques coming from jet substructure.

[1]on behalf of the ATLAS Collaboration

Samuel Meehan
The University of Chicago

Date submitted: 08 Jan 2013 Electronic form version 1.4