

Abstract Submitted
for the APR13 Meeting of
The American Physical Society

New Simulations of ATLAS Data for the 8TeV Upgrade ARYA AFSHARI, California State University of Fresno — The recent Large Hadron Collider (LHC) beam upgrade in center-of-mass energy from $s = 7\text{TeV}$ to $s = 8\text{TeV}$ required upgrades to the existing event generators for simulation of data. Data simulation using known theory is compared to processed data from the ATLAS detector in order to ensure the calibration of the detector. The upgrade in the Pythia6 to Pythia8 event generator was validated, as well as the various parton distribution functions (PDF's) CTEQ, MRST, and MSTW. A Monte Carlo (MC) simulation for the excited W^* was created at various resonant energies using Pythia6 with the CTEQ PDF and one for each PDF in Pythia8. Various dijet parameters were compared within the PDF's as well as the Fchi variable against the QCD background. Inclusive to the work done, two different methods were employed in finding the mass of the excited boson W^* . This work is from the authors' summer 2012 research at CERN.

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Date submitted: 11 Jan 2013

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