



# LHC Seminar

SPEAKER: Shih-Chieh Hsu (University of Washington, Seattle)

TITLE: **Recent Diboson Results from ATLAS**

DATE: Tue 27/11/2012 11:00

PLACE: Main Auditorium

## ABSTRACT

Measurements of the production of electroweak boson pairs at the LHC provide important tests of the electroweak sector of the Standard Model, including the electroweak symmetry breaking mechanism, and allow extraction of limits on anomalous triple-gauge couplings. ATLAS has studied diboson production processes involving all combinations of W, Z and isolated photons. Total and differential cross sections are measured in regions of phase space where the detector has high acceptance, and are then extrapolated to the full phase space using theoretical calculations of the acceptance. The  $W\gamma$ ,  $Z\gamma$ ,  $WW$ ,  $WZ$  and  $ZZ$  processes are used to provide new constraints on the triple-gauge couplings. The measurements of diboson production performed using leptonic decay channels are the cleanest probes of these processes. Measurements of  $WW+WZ$  production in the semileptonic channel, although challenging due to the high background rates, are important for understanding the related channels of Higgs boson production in association with W and Z bosons. The latest ATLAS results using data collected at a centre-of-mass energies of 7 and 8 TeV will be presented.