

## Cosmic test of sTGC detector and study of muon reconstruction

After The discovery of Higgs boson in 2012, upgrades are needed for both the LHC (the Large Hadron Collider) and ATLAS (A Toroidal Large Hadron Collider Apparatus) experiment to study the property of higgs and search for new physics. The upgrade of LHC is mainly to improve the luminosity which lead to high background radiation. The upgrade of ATLAS experiment is required accordingly. NSW(New Small Wheel) as the main part of the ATLAS Phase-I upgrade were designed using MM and sTGC detectors to reduce the fake trigger in the end cap region and reconstruct the precision muon tracking under high radiation background. This talk will cover the sTGC detector, its cosmic test and the muon reconstruction in future NSW system.