



Contribution ID: 142

Type: Oral Presentation

STAR Upgrade Plan for the Coming Decade

Friday 17 August 2012 14:00 (20 minutes)

The STAR Collaboration is scheduled to complete the Heavy Flavor Tracker (HFT) and the Muon Telescope Detector (MTD) upgrades by 2014. These detectors will greatly enhance the STAR physics capability to measure heavy quark collectivity and correlations using topologically reconstructed charm hadrons and heavy quark decay e -muon correlations. In addition, measurements of the quarkonium muon decay channels will enable us to separate Upsilon 1S from 2S and 3S states in $p+p$ and $A+A$ collisions. STAR has also embarked on an upgrade plan to extend the measurement capabilities for jets, electron/photon and leading particles in the forward rapidity region in the coming decade. Planned detector upgrades include tracking detectors for charged particles, electro-magnetic and hadronic calorimeters and particle identification detector in the forward direction. We will present physics motivations, status of detector R&D and design considerations for the forward measurements focusing on $p+p/p+A$ and polarized $p+p$ collisions. The STAR detector system will be in a unique position to make important measurements for $e+p$ and $e+A$ physics program during the early phase of the eRHIC era. Our physics considerations and possible detector evolution towards an eSTAR program will also be discussed.

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Session Classification: Parallel 6C: New Experimental Developments (Chair J. Stroth)

Track Classification: Experiment upgrades, new facilities, and instrumentation