

The Future of Relativistic Heavy Ion Physics in the Forward Region in PHENIX

Thursday, 31 May 2012 16:50 (20 minutes)

The field of Relativistic Heavy Ion Physics has made great strides in the past decade with the establishment of the strongly interacting Quark Gluon Plasma (sQGP) in high energy collisions of heavy ions at the Relativistic Heavy Ion Collider (RHIC) and now at the LHC. Experience has taught us that large rapidity coverage, as well as careful measurements of cold nuclear matter will be important factors in giving us a quantitative understanding of the sQGP. I will outline plans for an upgrade aimed at covering a region $1 < \eta < 4$ and the contributions that such an upgrade can make to our understanding of the initial state, entropy production, parton energy loss, and long range correlations in the sQGP. I will also briefly indicate some of the spin measurements which such an upgrade will enable as well as its capabilities in an early phase of a possible electron-ion program. Inherent in this plan, is the capability of an sPHENIX detector, which together with the central region upgrade will cover a rapidity region between -1 and 4 units of rapidity with a capability to make the most critical measurements towards a comprehensive understanding of the sQGP.

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Session Classification: Parallel VC: Initial state and pA