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Type: **Talk**

Measurement of $b\bar{b}$ production at forward rapidity in $p+p$ collisions at $\sqrt{s} = 510$ GeV

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Heavy flavor quarks are an important probe of the initial state of the Quark Gluon Plasma formed in heavy-ion collisions. Bottom and charm quarks are produced early in the collision, primarily through hard interactions, and experience the full evolution of the medium. Understanding bottom quark production in $p+p$ collisions gives a baseline reference for studying larger collision systems. The measurement of the $b\bar{b}$ cross section gives insight into b quark production mechanisms which can directly test pQCD predictions. Utilizing the unique properties of neutral B meson oscillation, the $b\bar{b}$ signal is extracted from like-sign dimuons with invariant mass of $5-10$ GeV/c^2 at forward rapidity. Measuring like-sign dimuons within this mass range provides an enriched bottom signal with minimal amount of open charm background and without any contributions from quarkonia or Drell-Yan pairs. In this talk, we report the $b\bar{b}$ differential cross section and extrapolated total cross section. The azimuthal opening angle between muon pairs from $b\bar{b}$ decays and their p_T distributions will also be presented. The total cross section at $\sqrt{s} = 510$ GeV is compared to world data at different energies and to a perturbative quantum chromodynamics calculation.

Is this abstract from experiment?

Yes

Internet talk

Yes

Name of experiment and experimental site

PHENIX at RHIC at Brookhaven National Lab

Is the speaker for that presentation defined?

Yes

Details

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