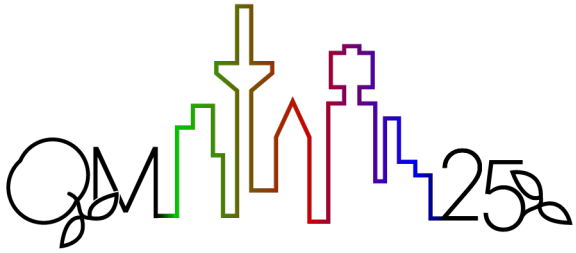

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Fraction of B-meson decays in J/ψ yields at $\sqrt{s} = 200$ GeV measured by the PHENIX detector

First results from the PHENIX experiment on the fraction of J/ψ mesons at midrapidity region ($\mid \eta \mid < 0.35$) coming from B-meson decay ($F_{B\to J/\psi}$) in p+p collisions at $\sqrt{s}$ =˜200˜GeV at RHIC will be presented. The measurement is performed using the central silicon vertex detector, which provides precise tracking and distance-of-closest-approach determinations, enabling the statistical separation of J/ψ due to B-meson decays from prompt J/ψ. PHENIX results will be shown across a large rapidity range, and compared to other experiments as a function of transverse momentum, and center of mass energy. In addition, the interpretation of the results with respect to fixed-order-next-to-leading-logarithm, and the current theoretical model calculations are provided for better understanding of the underlying physics. It should be noted that the measurement of bottom (B) mesons in p+p collisions is of interest to constrain the total bottom cross section as well as test our understanding of bottom quark production mechanisms and hadronization. The present results in p+p collisions are crucial baseline for the future measurements of B-meson decay in more complex environments like in Au + Au collisions at maximum RHIC energy where the quark-gluons plasma has been created.

Category

Experiment

Collaboration (if applicable)

PHENIX

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