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Study of Charm and Beauty using electron-D^0 azimuthal correlations in the STAR experiment at RHIC

Content :

The energy loss of heavy quarks in the hot and dense matter created in high-energy nuclear collisions at RHIC, can be used to probe the properties of the medium. Both charm and beauty quarks contribute to the non-photonic electrons through their semi-leptonic decays. It is essential to determine experimentally the relative contribution of charm and beauty quarks to understand the observed suppression of non-photonic electrons at high pT in central Au+Au collisions. The azimuthal angular correlations of non-photonic electrons with the reconstructed $D\^{0}$ allow to disentangle the contribution of charm and beauty to the electron spectrum.
We discuss the STAR measurement of non-photonic electron-D^{0} azimuthal correlations in p+p collisions at 200 GeV. Furthermore, we show preliminary results from the application of microvertexing techniques for charm and beauty searches in Au+Au collisions at 200 GeV using the information of the Silicon vertex tracker of STAR.

Collaboration :

STAR Collaboration

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