Abstract Submitted
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Measurement of Dielectron Spectra with the Hadron Blind Detector in PHENIX JIAYIN SUN, Stony Brook University — Dielectrons are an important color neutral probe for studying the evolution of the hot dense medium created by heavy ion collisions at RHIC. At low mass region, dielectron spectra consists mainly of direct photons and light vector mesons, and give insight on the earliest stages of the collisions and thus constrain theoretical models on thermalization and chiral symmetry restoration in heavy ion collisions. At intermediate and high mass region, there are significant contributions from charm and bottom. The region was utilized to measure cross sections of open charm and open bottom, as well as quarkonium suppression. The measurement of the dielectron spectra, however, suffers from an unfavorable signal to background ratio. Random combination of electron positron pairs from unrelated sources, mostly Dalitz decay of $\pi 0$ and external conversion of decay photon to electrons, are the main contributor to the background. The Hadron Blind Detector, a windowless proximity focusing Cerenkov detector, is designed to reduce this background by identifying electron tracks from photon conversions and $\pi 0$ Dalitz decays. The detector has been installed and operated in PHENIX in 2009 and 2010, where Au+Au and reference p+p data sets were taken. Results from these data sets will be presented.

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