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## **Measurements of di-electron production in Au+Au collisions at RHIC-PHENIX**

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The measurement of di-electrons is a powerful tool to study the properties of the strongly interacting matter formed in heavy-ion collisions. Since electrons are not subject to final state interactions, they carry the information at the time of their production. In an earlier di-electron measurement by PHENIX[1], a large enhancement of a factor of  $\sim 5$  with respect to expected hadronic sources was observed in the mass region  $0.15-0.75 \text{ GeV}/c^2$  for minimum bias events. However, the measurement was limited by a huge combinatorial background dominated by the electrons from  $\pi^0$  Dalitz decays and  $\gamma$  conversions. In order to remove such background electrons, a Hadron Blind Detector (HBD) was installed as an upgrade of the PHENIX detector. In 2009 and 2010, the HBD was successfully operated and a data sample of p+p collisions and Au+Au collisions were collected. In this presentation, we report the current status of the di-electron analysis at RHIC-PHENIX. [1] A. Adare et al, Phys. Rev. C81, 034911(2010)

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