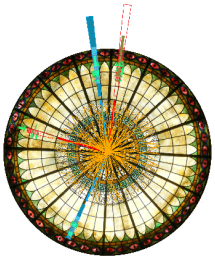
DIS 2015
XXIII International Workshop on Deep-Inelastic Scattering and Related Subjects

Dallas, Texas
April 27 – May 1, 2015



Contribution ID: **121** Type: **not specified**

Dark photon search with neutral meson decays at the PHENIX experiment

Wednesday 29 April 2015 11:30 (17 minutes)

A "dark photon" has been proposed as a hypothetical U(1) gauge boson in the dark sector. The dark photon is weakly coupled with ordinary photons and can explain several experimental results which can not be described by the standard model such as the excess of high energy positrons in cosmic rays and the muon g-2 anomaly. The PHENIX experiment at the Relativistic Heavy Ion Collider (RHIC) has performed a search for electron pairs from dark photons coupling to standard model photons in Dalitz decays of the π^0 and η. An upper limit of the dark photon mixing strength with ordinary photons has been obtained for 30<m_U < 90MeV/c^2. We will present our latest result of the dark photon search in this talk.

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Session Classification: WG3:Electroweak Physics and Beyond the Standard Model

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