

Abstract Submitted  
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**Photon Production in  $\sqrt{s_{NN}}=200\text{GeV}$  Au+Au collisions measured by the PHENIX experiment at RHIC** TAKAO SAKAGUCHI, Brookhaven National Laboratory, PHENIX COLLABORATION — It has been an intriguing result that the yield of high  $p_T$  hadrons is suppressed in central Au+Au collisions where a hot and dense medium is supposed to be created. The recent photon measurement from PHENIX has shown that the excess of direct photons at high  $p_T$ , originating from initial state processes, over decay-photons from known hadronic sources is consistent with a NLO pQCD calculation scaled by the number of binary nucleon-nucleon collisions. The result confirmed that the suppression of high  $p_T$  hadrons is due to a final state interaction of hard scattered partons and the medium. Under existence of the medium, various photon contributions are expected at high to intermediate transverse momentum on top of initial process, such as jet-photon conversion, bremsstrahlung and thermal radiation. PHENIX recorded the integrated luminosity of  $0.24 \text{ nb}^{-1}$  in  $\sqrt{s_{NN}}=200\text{GeV}$  Au+Au collisions in RHIC Run-4, which allows us to reduce uncertainties in the  $p_T$  region where the above processes become prominent. In this talk, photon contributions from various processes will be discussed based on the latest photon measurement.

Takao Sakaguchi  
Brookhaven National Laboratory

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