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Measurement of Neutral Pions in  $\sqrt{s_{NN}} = 200 \text{ GeV Cu+Cu Col-}$ lisions with the PHENIX Experiment at RHIC STEFAN BATHE, University of California at Riverside, PHENIX COLLABORATION — The suppression of high $p_T$  hadrons in central Au+Au collisions has been one of the most significant results at RHIC. It has been attributed to energy loss of partons as they traverse the hot and dense medium created in the collision. It is of interest at which system size the suppression commences. This can be and has been studied by varying the centrality of the collision. A continuous increase of the suppression with increasing centrality has been observed with no indication of a sudden onset. A more precise way to measure the system-size dependence of the suppression is to study the particle production in a lighter system like Cu+Cu. In particular, this permits measurement of particle production for a system with different medium properties as compared to Au+Au, even at the same number of underlying binary nucleon-nucleon collisions. In the 2005 run, PHENIX sampled a total of 3.06 nb<sup>-1</sup> Cu+Cu collisions at  $\sqrt{s_{NN}}$ = 200 GeV, providing the possibility of comparing particle production at high  $p_T$ in Cu+Cu and Au+Au. The PHENIX result on neutral pion production in Cu+Cu will be presented.

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