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Coherent Exclusive ρ^0 Production in Ultra Peripheral Relativistic Heavy Ion Collisions with STAR[1] YURY GORBUNOV, Creighton University, STAR COLLABORATION — We present a measurement of the coherent ρ^0 and direct $\pi^+\pi^-$ pair photo-production in ultra peripheral relativistic heavy ion collisions at $\sqrt{s_{NN}}$=200 GeV. At impact parameters larger then twice the nuclear radius, the nuclei do not physically collide, but interact via long-range electromagnetic fields. The process $AuAu \rightarrow Au^*Au^*\rho^0$ with accompanying mutual nuclear excitations is observed. The transverse momentum of the ρ^0 is peaked at low p_T which is consistent with coherent coupling to both nuclei. We report ρ^0 production cross section accompanied by mutual nuclear break-up and the ratio of direct pion to ρ^0 production.

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Yury Gorbunov
Creighton University

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