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Are direct photons suppressed in PHENIX at high p_T in relativistic heavy ion collisions?[1] GABOR DAVID, BNL — Preliminary results from PHENIX on direct photon production in 200GeV Au+Au collisions indicated that while at moderate p_T (4-14GeV/c) the nuclear modification factor R_{AA}^{γ} for photons is unity, at higher p_T it may be significantly smaller and possibly, similar to the well-established hadron suppression (jet quenching) level. Since R_{AA}^{γ} has been derived using p+p data measured in the same experiment, such suppression may have both trivial reasons (the difference in charge squared sum of quarks in proton and neutron that enters in the hard photon production rate in case of Au+Au) and/or be the consequence of new phenomena. The initial parton distributions themselves may be changed, which should be manifested already in d+Au collisions. Furthermore, the presence of the hot, dense medium in Au+Au collisions may either enhance (by collinear parton-photon "conversion") or reduce the yield of high p_T photons. Based upon the latest $\sqrt{s} = 200$GeV d+Au and Au+Au photon data from PHENIX we will investigate if direct photons are suppressed at high p_T and if so, what the physics implications may be.

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