

Abstract Submitted  
for the HAW09 Meeting of  
The American Physical Society

**$\Upsilon$ production in p+p, d+Au, Au+Au collisions at  $\sqrt{s_{NN}}=200$  GeV in STAR** ROSI REED, MANUEL CALDERON, DEBASISH DAS, PIBERO KISA, HAIDONG LIU, STAR COLLABORATION — The properties of the dense matter produced in heavy-ion collisions can be investigated by studying its effect on quarkonia production. In particular, the  $\Upsilon$ states are of interest because both the effect due to co-movers and feed down is smaller than for  $J/\psi$ . Suppression of quarkonia is theorized to be a QGP signature due to the Debye color screening of the potential between the heavy quarks. Lattice studies show that a sequential suppression of quarkonia states in heavy ion collisions when compared to production in p+p collisions can provide us with a thermometer for the matter produced in relativistic heavy-ion collisions. This requires a detailed understanding of  $\Upsilon$ production in p+p collisions, as well as d+Au calculations so that  $R_{AA}$  can be determined. We will present our preliminary results for mid-rapidity  $\Upsilon$ production in p+p, d+Au, and Au+Au at  $\sqrt{s_{NN}}=200$  GeV in the STAR experiment. We will compare these results with theoretical QCD calculations.

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Date submitted: 06 Jul 2009

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