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**$\phi$  meson production in Deuteron-Gold Collisions at  $\sqrt{s} = 200$  GeV at PHENIX** SUNGHO YOON, University of Illinois at Urbana Champaign, PHENIX COLLABORATION — Surprising nuclear effects from  $J/\psi$  and light meson productions at forward rapidity region have been observed in d+Au collisions at  $\sqrt{s} = 200$  GeV in PHENIX using the forward muon spectrometers. The  $J/\psi$  signals were reconstructed through the dimuon decay channel, and the light mesons ( $\pi, K$ ) were detected through their decays to muons as well as through the ‘punch-through’ hadrons. To understand the origin for the nuclear effects, it would be very useful to detect the  $\phi$  meson which contains a pair of strange and anti-strange quarks. The measurement of  $\phi$  production at PHENIX will also help us to understand the nuclear effects as a function of the mass of the produced hadrons. The  $\phi$  production could be measured via  $\phi \rightarrow \mu^+ \mu^-$  decay channel using the muon spectrometers at PHENIX. However, the current trigger system is optimized for the measurement of  $J/\psi$ . An improvement to the trigger system will allow the study of  $\phi$  production. We have calculated the production of  $\phi$  in the d+Au reaction at  $\sqrt{s} = 200$  GeV. The acceptance of the PHENIX detector for the  $\phi$  events, and the kinematic coverage and the anticipated statistical accuracy for the accepted  $\phi$  events have also been studied. In this talk, we present the results of this study.

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