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**$e^+e^-$  pairs from open heavy flavor in  $p+p$  and  $d+Au$  collisions at  $\sqrt{s_{NN}} = 200$  GeV** YUE HANG LEUNG, Stony Brook University, PHENIX COLLABORATION — The dielectron mass spectrum is a unique probe to directly access the different stages of a heavy-ion collision. The intermediate ( $1 < m_{e^+e^-} < 3$  GeV/ $c^2$ ) and high ( $4 < m_{e^+e^-} < 8$  GeV/ $c^2$ ) mass regions are dominated by semileptonic decays of open charm and beauty respectively, and so provide information about the heavy flavor dynamics. We report a measurement of  $e^+e^-$  pairs from semileptonic heavy-flavor decays in  $p+p$  and  $d+Au$  collisions at  $\sqrt{s_{NN}} = 200$  GeV. The yield from  $b\bar{b}$  and  $c\bar{c}$  are separated by exploiting a double differential fit done simultaneously in mass and  $p_T$ , with  $\sigma_{c\bar{c}}$  and  $\sigma_{b\bar{b}}$  as free parameters. We used three different event generators, PYTHIA, MC@NLO, POWHEG, to simulate the shape of  $c\bar{c}$  and  $b\bar{b}$ . Although the spectral shapes are well described in general, the normalization of the simulated samples are different. The  $p+p$  results are compared with  $d+Au$  to see for any cold nuclear matter effects. The extrapolated cross-sections obtained using these event generators are also reported.

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