

Abstract Submitted  
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**First observation and studies of the simultaneous production of  $J/\psi$  and  $\Upsilon$  at the Tevatron** OLGA GOGOTA<sup>1</sup>, Kiev National University, Ukraine, DZERO COLLABORATION — We present the first observation of the simultaneous production of  $J/\psi$  and  $\Upsilon$  mesons with the D0 detector at Fermilab in  $p\bar{p}$  collisions at  $\sqrt{s} = 1.96$  TeV. The production cross section for both singly and simultaneously produced mesons is measured using a sample with an integrated luminosity of  $8.1 \text{ fb}^{-1}$ . The simultaneous production cross section is separated into contributions due to single- and double-parton scatterings. Using these measurements, we determine the effective cross section  $\sigma_{eff}$ , a parameter characterizing an effective spatial area of the parton interactions and related to the parton spatial density inside the nucleon.

<sup>1</sup>Presenting on behalf of the D0 Collaboration

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