

Abstract Submitted  
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**Cross Section Measurement of Associated  $W^\pm + J/\psi$  Production in  $pp$  Collisions at  $\sqrt{s} = 13$  TeV With the ATLAS Detector** CHARLES BURTON, University of Texas at Austin, ATLAS COLLABORATION — The cross-sections of prompt and non-prompt production of  $W^\pm + J/\psi$  are being measured by the ATLAS Collaboration using the full 13 TeV LHC Run II  $pp$  collision data set. The prompt production of associated  $J/\psi$  with a  $W^\pm$ , where both particles are produced in a single parton-parton interaction, provides constraints on models of non-relativistic quantum chromodynamics, especially in the realm of heavy quarkonia production. Additionally, this process can occur in double-parton scattering (DPS) interactions, and that measurement offers a clear test of DPS models. In this analysis, we emphasize the ability to separate the single-parton and double-parton production modes, in order to better understand each one. Finally, the non-prompt measurement allows for the study of top production and b-quark fragmentation.

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