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Measurement of the Differential Production Cross Section of $J/\Psi \to \mu^+\mu^-$ in Proton-Proton Collisions at $\sqrt{s} = 10$ TeV with Simulated Data YU ZHENG, IAN SHIPSEY, CMS COLLABORATION — We present several methods for measuring the differential production cross section of $J/\Psi \to mu^+\mu^-$ in proton-proton collisions at $\sqrt{s} = 10$ TeV, using simulated samples of J/Ψ corresponding to data to be collected in the first LHC run by the CMS detector. We show the reconstruction and trigger performance of the CMS detector for single muons and $J/\Psi \to \mu^+\mu^-$, discussing reconstruction efficiencies and trigger efficiencies. We also separate prompt J/Ψ from those produced in the decay of B-hadrons by exploiting the long lifetime of beauty particles. About thirteen thousand reconstructed prompt J/Ψ events pass the dedicated J/Ψ trigger in a simulated data sample corresponding to an integrated luminosity of 1 pb^{-1}.

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