

MEASUREMENT OF SINGLE-MUON AND J/ψ PRODUCTION AT FORWARD RAPIDITY AS A FUNCTION OF THE COLLISION MULTIPLICITY IN PP COLLISIONS AT $\sqrt{s} = 7$ TeV WITH ALICE

Recently, it has been argued that high-multiplicity pp collisions could lead to the formation of high energy density matter as in heavy ions collisions [1]. Indeed, the charged particle multiplicity reached in pp collisions at the LHC [2] is similar to the one measured in semi-peripheral Cu-Cu collisions at $\sqrt{s_{NN}} = 200$ GeV [3].

We will present the dependence on charged particle multiplicity of the single-muon and $J/\psi \rightarrow \mu^+\mu^-$ yields in pp collisions at $\sqrt{s} = 7$ TeV. The number of reconstructed tracklets ($\eta < 1.6$) in the silicon pixel detector are exploited to measure the charged particle density at mid-rapidity. Single-muons ($p_T > 4$ GeV/c) from heavy flavoured hadron decays and inclusive J/ψ ($p_T > 0$) yields have been measured with the muon spectrometer ($2.5 < \eta < 4.0$). J/ψ yields at multiplicities five times the average pp multiplicity will be presented.

[1] K. Werner et al. arXiv:1010.0400v1, and K. Werner et al., Phys. Rev. Lett. 106, 122004 (2011)

[2] ALICE Collaboration, EPJC: Vol. 68 (2010) 345

[3] PHOBOS Collaboration, Phys. Rev. C 83, 024913 (2011)

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Track Classification: Heavy flavor and quarkonia production