

Inclusive J/ψ and $\psi(2S)$ production in pp collisions at $\sqrt{s} = 7$ TeV at forward rapidity with ALICE at LHC

The ALICE experiment at LHC has studied inclusive J/ψ and $\psi(2S)$ production at forward rapidities in pp collisions at $\sqrt{s} = 7$ TeV with the ALICE Muon Spectrometer. The analysis has been carried out on a data sample corresponding to an integrated luminosity = 1.35 pb⁻¹. The measured production cross-sections of J/ψ and $\psi(2S)$ are:

$$\sigma_{J/\psi} (2.5 < y < 4, 0 < p_T < 20 \text{ GeV}/c) = 6.76 \pm 0.04 \text{ (stat.)} \pm 0.64 \text{ (syst.)} \mu\text{b.}$$

$$\sigma_{\psi(2S)} (2.5 < y < 4, 0 < p_T < 20 \text{ GeV}/c) = 1.28 \pm 0.08 \text{ (stat.)} \pm 0.21 \text{ (syst.)} \mu\text{b.}$$

The J/ψ and $\psi(2S)$ differential cross-sections, in transverse momentum and rapidity, have also been measured. The results have been compared with the previous ALICE published results and also with the LHCb measurement.

The $\psi(2S)/J/\psi$ acceptance corrected ratio integrated over p_T and y is:

$$\psi(2S)/J/\psi (2.5 < y < 4, 0 < p_T < 20 \text{ GeV}/c) = 0.024 \pm 0.002 \text{ (stat.)} \pm 0.003 \text{ (syst.)}.$$

This ratio has also been measured as a function of transverse momentum and rapidity. The ratio as a function of transverse momentum has been compared with LHCb result.

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