

# Conventional and exotic charmonium production at the ATLAS experiment

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We present detailed precision measurements of the prompt and non-prompt differential production cross sections for the  $J/\psi$ ,  $\psi(2S)$ ,  $\chi_c$  and  $X(3872)$  charmonium states at  $\sqrt{s}=8$  TeV, covering  $J/\psi$  and  $\psi(2S) \rightarrow \mu\mu$ ,  $\psi(2S) \rightarrow J/\psi$   $p\bar{p}$  and  $\chi_c$ . The results are compared with leading theoretical models.

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