

Heavy flavour production with the ATLAS experiment

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ATLAS has a wide programme to study the production cross section and decay properties of particles with beauty, as well as charmonium and bottomonium states. This presentation will cover ATLAS results in the domain of charmonium production, including J/ψ , $\psi(2s)$ and χ_c states, B^+ production, and updates on the D^* meson cross-section analysis. The analyses discussed include double-differential production cross-section measurements of the J/ψ , $\psi(2S)$ and P-wave charmonium states χ_{cJ} , extending upon previous measurements in precision and kinematic reach. Prompt and non-prompt modes are distinguished, as well as J/ψ vs $\psi(2s)$ and the contribution to J/ψ production from χ_c feed-down. Alongside the latter analysis, a competitive measurement of the branching fraction $B^+ \rightarrow \chi_{c1} + K^+$ was also performed. Results of these measurements are compared with the latest theoretical predictions from a variety of theoretical approaches.

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