

Studies of open charm and charmonium production at LHCb

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The first heavy flavour measurements at LHCb will be about open charm and J/ψ production. Experience on the triggering and reconstruction of such final states during the initial phase of the LHC startup is therefore eagerly awaited. This experience will be reported together with prospects for the full measurements. The first charm hadrons will be reconstructed in the $D^0 \rightarrow K\pi$ and $D^\pm \rightarrow K\pi\pi$ and their inclusive production observed in the forward region covered by LHCb. The inclusive J/ψ production cross section will be measured with the decay mode $J/\psi \rightarrow \mu\mu$, as a function of the J/ψ pseudo-rapidity η and transverse momentum p_T , in the region $3 < \eta < 5$ and $p_T < 7$ GeV/ c . Contributions of J/ψ from b-hadron decays will be separated from prompt J/ψ produced directly in the pp collisions or in the decays of heavier prompt states. A method to measure the production polarization of the J/ψ will also be presented.

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