

D^\pm production asymmetry at the LHC from heavy quark recombination mechanism

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The asymmetry in the forward region production cross section of D^\pm is calculated using the heavy quark recombination mechanism for pp collisions at 7 TeV. By suitable choices of four nonperturbative parameters, our calculated results can reproduce those obtained at LHCb. We find $A_p \sim -1\%$ when integrated over $2.0 \text{ GeV} < p_T < 18 \text{ GeV}$ and $2.2 < \eta < 4.75$, which agrees with $A_p = -0.96 \pm 0.26 \pm 0.18\%$ as measured by LHCb. Furthermore, the calculated distributions in η and p_T agree reasonably well with those obtained at LHCb. Predictions on production asymmetry of heavy baryons are also made in the same formalism.

Primary authors: Prof. LEBOVICH, Adam (University of Pittsburgh); Prof. PETROV, Alexey (Wayne State University / MCTP); Mr LAI, Wai Kin (University of Pittsburgh)

Presenter: Mr LAI, Wai Kin (University of Pittsburgh)

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