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b-hadron production asymmetries at LHCb

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The scientific programme of LHCb includes a large number CP violation measurements in b -hadron decays. To perform such measurements, one needs to disentangle the physical asymmetry from others spurious effects, such as production asymmetries arising from the flavour-asymmetric proton-proton collisions. Using an integrated luminosity of 1 fb^{-1} collected at a centre-of-mass energy of 7 TeV, the B^0 and B_s^0 production asymmetries, within the LHCb acceptance, are measured. The production asymmetries, integrated over p_T and η in the range $4 < p_T < 30 \text{ GeV}/c$ and $2.5 < \eta < 4.5$, are determined to be $A_P(B^0) = (-0.35 \pm 0.76 \pm 0.28)\%$ and $A_P(B_s^0) = (1.09 \pm 2.61 \pm 0.66)\%$, where the first uncertainties are statistical and the second systematic. Updates of these measurements using 2 fb^{-1} of data collected at a centre-of-mass energy of 8 TeV, together with the measurement of B^+ and Λ_b^0 production asymmetries, are under way.

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