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First observation of the charmless baryonic decay $B^+ \to \bar{\Lambda} p \bar{p} p$

Search for the charmless baryonic decay $B^+ \to \bar{\Lambda} p \bar{p} p$ is performed using proton-proton collision data recorded by the LHCb experiment, corresponding to an integrated luminosity of 5.4fb^{-1}. The branching fraction is measured to be $\mathcal{B}(B^+ \to \bar{\Lambda} p \bar{p} p) = (2.08 \pm 0.34 \pm 0.10 \pm 0.26) \times 10^{-7}$, where the first uncertainty is statistical, the second is systematic, and the third arises from the normalization channel. The CP asymmetry is measured to be $\mathcal{A}_{CP} = (5.4 \pm 15.6 \pm 2.4)\%$, where the uncertainties are statistical and systematic. The background-subtracted invariant mass distributions of baryon-antibaryon pairs exhibit pronounced enhancements at both kinematic thresholds.

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