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Title:	Measurements of the branching fractions of $\Lambda_c^+ \rightarrow p\eta$ and $\Lambda_c^+ \rightarrow p\pi^0$ decays at Belle.
Authors:	Bhardwaj, Vishal (/jspui/browse?type=author&value=Bhardwaj%2C+Vishal) Patra, Sourav (/jspui/browse?type=author&value=Patra%2C+Sourav)
Keywords:	Branching fraction lepton colliders
Issue Date:	2021
Citation:	Physical Review D, 103(7).
Abstract:	We report measurements of the branching fractions of singly Cabibbo-suppressed decays $\Lambda_b^0 \rightarrow p\eta$ and $\Lambda_b^0 \rightarrow p\pi^0$ using the full Belle data sample corresponding to an integrated luminosity of 980.6 fb^{-1} . The data were collected by the Belle detector at the KEKB epe- asymmetric energy collider. A clear Λ_b^0 signal is seen in the invariant mass distribution of $p\eta$. The fitted number of signal events of the $\Lambda_b^0 \rightarrow p\eta$ process is 7734 ± 263 ; from this, we measure the ratio of branching fractions $\mathcal{B}(\Lambda_b^0 \rightarrow p\eta)/\mathcal{B}(\Lambda_b^0 \rightarrow pK^-\pi^+\pi^0) = 2.258 \pm 0.077 \text{ (stat)} \pm 0.122 \text{ (syst)} \times 10^{-2}$, from which we infer the branching fraction $\mathcal{B}(\Lambda_b^0 \rightarrow p\eta) = 1.42 \pm 0.05 \text{ (stat)} \pm 0.11 \text{ (syst)} \times 10^{-3}$. In addition, no significant signal for $\Lambda_b^0 \rightarrow p\pi^0$ is found, so an upper limit on the branching fraction of $\mathcal{B}(\Lambda_b^0 \rightarrow p\pi^0) < 8.0 \times 10^{-5}$ at a 90% credibility level is set, more than 3 times better than the best current upper limit.
Description:	Only IISER Mohali authors are available in the record.
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