

## [HEPP] Measurements of $\Lambda_c^+ \rightarrow p h h$ Branching Fractions with 2011 LHCb Data

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An analysis to measure the ratios of the  $\Lambda_c^+ \rightarrow p^+ h^- h^+$ ,  $\{h = K, \pi\}$   $\mathcal{BF}$ s using 2011 LHCb data is presented. Two sources of  $\Lambda_c^+$  are used, those produced promptly and those produced in semileptonic  $\Lambda_b^0 \rightarrow \Lambda_c^+ \mu^- \bar{\nu}$  decays. The analysis includes a search for the hitherto unobserved doubly-Cabibbo-suppressed mode  $\Lambda_c^+ \rightarrow p^+ \pi^- K^+$ . The ratios measured are defined as

$\% \begin{matrix} \text{begin} \\ \text{equation*} \end{matrix}$

$$\text{BF}_{\Lambda_c^+ \rightarrow p^+ K^- K^+} \frac{\mathcal{BF}_{\Lambda_c^+ \rightarrow p^+ \pi^- \pi^+} \mathcal{BF}_{\Lambda_c^+ \rightarrow p^+ \pi^- K^+}}{\mathcal{BF}_{\Lambda_c^+ \rightarrow p^+ K^- \pi^+} \mathcal{BF}_{\Lambda_c^+ \rightarrow p^+ K^- \pi^+} \mathcal{BF}_{\Lambda_c^+ \rightarrow p^+ K^- \pi^+}} \text{Aside from the obvious interest in observing a new decay mode, } t$$

*suppressed modes are recurrently poorly constrained, with errors of the order of 50% on their PDG values. A multivariate  $\Lambda_c^+$  selection and daughter particle identification are used to select candidates. The treatment of efficiencies, systematics and current status of the measurements are presented.*

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