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Title:	Measurements of the branching fractions of $\Xi^0_c \to \Lambda K^0_S$, $\Xi^0_c \to \Sigma^0 K^0_S$, and $\Xi^0_c \to \Sigma^+ K^-$ 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:	Measurements branching fractions decays at Belle
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Citation:	Physical Review D, 105(1), L011102.
Abstract:	Using the entire data sample of 980 fb^{-1} collected with the Belle detector at the KEKB asymmetric-energy e^+e^- collider, we present measurements of the branching fractions of the Cabibbo-favored decays $\Xi^0_c \to \Lambda K^0_S$, $\Xi^0_c \to \Sigma^0 K^0_S$, and $\Xi^0_c \to \Sigma^+ K^-$. Taking the decay $\Xi^0_c \to \Xi^- \pi^+$ as the normalization mode, we measure the branching fraction ratio $B(\Xi^0_c \to \Lambda K^0_S)/B(\Xi^0_c \to \Xi^- \pi^+) = 0.229 \pm 0.008 \pm 0.012$ with improved precision, and measure the branching fraction ratios $B(\Xi^0_c \to \Sigma^0 K^0_S)/B(\Xi^0_c \to \Xi^- \pi^+) = 0.038 \pm 0.006 \pm 0.004$ and $B(\Xi^0_c \to \Sigma^+ K^-)/B(\Xi^0_c \to \Xi^- \pi^+) = 0.123 \pm 0.007 \pm 0.010$ for the first time. Taking into account the branching fraction of the normalization mode, the absolute branching fractions are determined to be $B(\Xi^0_c \to \Lambda K^0_S) = (3.27 \pm 0.11 \pm 0.17 \pm 0.73) \times 10^{-3}$, $B(\Xi^0_c \to \Sigma^0 K^0_S) = (0.54 \pm 0.09 \pm 0.06 \pm 0.12) \times 10^{-3}$, and $B(\Xi^0_c \to \Sigma^+ K^-) = (1.76 \pm 0.10 \pm 0.14 \pm 0.39) \times 10^{-3}$. The first and second uncertainties above are statistical and systematic, respectively, while the third ones arise from the uncertainty of the branching fraction of $\Xi^0_c \to \Xi^- \pi^+$.
Description:	Only IISER Mohali authors are available in the record.
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