Contribution ID: 72

## Measurement of Branching Fractions of Singly Cabibbo-suppressed Decays $\Lambda_c^+ \to \Sigma^+ K_S^0$ and $\Sigma^0 K^+$

Wednesday, 17 August 2022 18:35 (10 minutes)

Based on a sample of  $4.4fb^{-1}$  of  $e^+e^-$  annihilation data collected in the energy region between 4.6 GeV and 4.7 GeV with the BESIII detector at BEPCII, two singly Cabibbo-suppressed decays  $\Lambda_c^+ \to \Sigma^0 K^+$  and  $\Lambda_c^+ \to \Sigma^+ K_S^0$  are studied. New determinations of the BFs of  $\Lambda_c \to \Sigma K$  decays, in particular the mode and  $\Lambda_c^+ \to \Sigma^+ K_S^0$ , are important for validating and improving these theoretical-model calculations. Furthermore, improved measurements may clarify the tension between the predictions in different models. The branching fractions  $\mathcal{B}(\Lambda_c^+ \to \Sigma^0 K^+)$  and  $\mathcal{B}(\Lambda_c^+ \to \Sigma^+ K_S^0)$  are determined to be  $(4.7 \pm 0.9(stat.) \pm 0.1(syst.) \pm 0.3(ref.)) \times 10^{-4}$  and  $(4.8 \pm 1.4(stat.) \pm 0.2(syst.) \pm 0.3(ref.)) \times 10^{-4}$ , respectively. The branching fraction of  $\Lambda_c^+ \to \Sigma^+ K_S^0$  decay is measured for the first time. With the additional data which are foreseen to be collected near the  $\Lambda_c$  pair threshold in the coming years, we expect our measurements to improve in precision, and shed more light on the topic of charmed baryon decays.

## Category

poster

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Session Classification: Posters

Track Classification: Posters