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LHCb: Search for CP violation in D0->KS0KS0 decays

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CP violation in the charm system has been observed for the first time by LHCb in 2019. Up to now, the effect has only be seen in a single observable, the Delta-ACP between D0->KK/pipi. Further measurements are therefore important for a better understanding of the physics picture in this novel field, and whether it is purely Standard-Model or not. Among the possible decay channels, the D0⟶KSKS one is very promising for a second observation, having the potential for a CP asymmetry of up to ˜1% in the SM. This channel is much more difficult to pursue at LHCb than its charged analogues, but thanks to recent improvement in the analysis, a measurement of its CP asymmetry on the Run-2 sample has just been completed, that is more precise than all previous measurements combined. We present the current result and the prospects for future LHCb runs.

Authors: TUCI, Giulia (Universita & INFN Pisa (IT)); RICCIARDI, Stefania (Science and Technology Facilities Council STFC (GB))

Presenter: TUCI, Giulia (Universita & INFN Pisa (IT))

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