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CP violation measurement in charm meson decays at the CMS experimentriment

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The results of the first study of CP violation in the charm sector at the CMS experiment are presented. The analysis is based on the proton-proton collision data with the center-of-mass energy of $\sqrt{s} = 13$ TeV. The measured CP violation parameter is $A_{CP}(D^0 \to K^0_S K^0_S) = (6.2 \pm 3.1(\text{stat.}) \pm 0.2(\text{syst.}) \pm 0.8(A_{CP}(D^0 \to K^0_S \pi^+ \pi^-))\%$, where the last uncertainty is due to the uncertainty in the reference channel asymmetry $A_{CP}(D^0 \to K^0_S \pi^+ \pi^-)$. Further searches for charm CP violation with novel RUN 3 data and new refined analysis techniques are in progress.

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