

## CP asymmetries in charm decays into neutral kaons

Thursday, 20 December 2018 15:30 (15 minutes)

A new  $CP$ -violation effect is found in charm decays into neutral kaons: the interference between two tree (Cabibbo-favored and doubly Cabibbo-suppressed) amplitudes with the mixing of final-state mesons. This effect, estimated to be of order of  $10^{-3}$ , is much larger than the direct  $CP$  asymmetries in these decays, but missed in the literature. It can be revealed by measuring the difference of the time-dependent  $CP$  asymmetries in the  $D^+ \rightarrow \pi^+ K_S^0$  and  $D_s^+ \rightarrow K^+ K_S^0$  modes, which are accessible at the LHCb and Belle II. If confirmed, the new effect has to be taken into account, as the above direct  $CP$  asymmetries are used to search for new physics.

### Type

Parallel talk

### Sessions (parallel only)

Heavy Flavor

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**Session Classification:** Heavy Flavor

**Track Classification:** Heavy Flavor