Contribution ID: **495** Type: **Parallel**

CP asymmetries in charm decays into neutral kaons

Saturday, 7 July 2018 14:00 (20 minutes)

We find a new CP-violation effect in charm decays into neutral kaons, which results from 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 an 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 $D^+ \to \pi^+ K^0_S$ and $D^+_s \to K^+ K^0_S$ modes, which are accessible at the LHCb and Belle II experiments. If confirmed, the new effect has to be taken into account, as the above direct CP asymmetries are used to search for new physics.

This work has been published in Phys.Rev.Lett 119.181802(2017).

Primary author: YU, Fu-Sheng

Presenter: YU, Fu-Sheng

Session Classification: Quark and Lepton Flavor Physics