Contribution ID: **16** Type: **contributed parallel talk**

Towards determination of the weak and strong phases in neutral D-meson decays into K*+-K-+

Tuesday, July 18, 2023 3:20 PM (20 minutes)

We study the effects of D^0-$\bar{D}^0$ mixing and CP violation in $D^0 \to K^{*\pm}K^{\mp}$ decays and their CP-conjugated processes. We find that both the D^0-$\bar{D}^0$ mixing parameters and the strong-interaction phase difference between $\bar{D}^0 \to K^{*\pm}K^{\mp}$ and $D^0 \to K^{*\pm}K^{\mp}$ transitions can be determined from the time-dependent measurements of these decay modes. In particular, it is possible to determine these physical quantities from the time-independent measurements of coherent $(D^0\bar{D}^0) \to (K^{*\pm}K^{\mp})(K^{*\pm}K^{\mp})$ decays on the $\psi(3770)$ and $\psi(4140)$ resonances at a super-τ-charm factory. Provided the CP-violating phase of D^0-$\bar{D}^0$ mixing is significant in an underlying scenario beyond the standard model, it can also be extracted from the $K^{*\pm}K^{\mp}$ events.

Consent

I consent to recording/broadcasting my presentation.

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