

D(s)+ decays and CPV/mixing at Belle

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We report a measurement of $D^0 - \bar{D}^0$ mixing in $D^0 \rightarrow K_S^0 \pi^+ \pi^-$ decays using a time-dependent Dalitz plot analysis.

We will also present an updated measurement of the mixing parameter y_{CP} in decays $D^0 \rightarrow K^+ K^-$ and $D^0 \rightarrow \pi^+ \pi^-$.

We will present a measurement to search for CP violation in charged D meson decays by measuring the CP violating asymmetry difference between Cabibbo-suppressed decays $D^+ \rightarrow K^+ K^- \pi^+$ and Cabibbo-favored decays $D_s^+ \rightarrow K^+ K^- \pi^+$ in a mass region of the ϕ resonance.

We have searched for CP violation in the decays $D^0 \rightarrow K_S^0 P^0$ where P^0 denotes a neutral pseudo-scalar meson which is either a π^0 , η , or η' . No evidence of significant CP violation is observed.

We report the most precise CP asymmetry measurement in the decay $D^0 \rightarrow K_S^0 \pi^0$ to date: $A_{CP}^{D^0 \rightarrow K_S^0 \pi^0} = (-0.28 \pm 0.19 \pm 0.10)$ asymmetries in the decays $D^0 \rightarrow K_S^0 \eta$ and $D^0 \rightarrow K_S^0 \eta'$:

$A_{CP}^{D^0 \rightarrow K_S^0 \eta} = (+0.54 \pm 0.51 \pm 0.16)$ $A_{CP}^{D^0 \rightarrow K_S^0 \eta'} = (+0.98 \pm 0.67 \pm 0.14)$ respectively.

We report the first observations of the decay $D^+ \rightarrow K^+ \eta^{(\prime)}$ and the search for the CP violation in the decay $D^+ \rightarrow \pi^+ \eta^{(\prime)}$.

The branching ratios with respect to their normalization modes and CP measurements will be presented.

We report preliminary results on the time-integrated asymmetry of the decays D^0 and \bar{D}^0 to $\pi^+ \pi^- \pi^0$.

Results of the Dalitz plot analysis of A_{CP} for two approaches – model dependent and model independent – are presented.

The results are obtained from a large data sample collected on the $\Upsilon(4S)$ and $\Upsilon(5S)$ resonance with the Belle detector at the KEKB asymmetric energy e^+e^- collider.

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