

Recent investigations of direct CP violation in B-meson decays at Belle

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Direct CP violation in B meson decays provides a good probe for New Physics. We report measurement of branching fraction(BF) and direct CP asymmetries (A_{CP}) in charmless B decays $B^+ \rightarrow K_s K_s K^+$ and $B^+ \rightarrow K_s K_{sp}^+$, which proceed through $b \rightarrow s$ and $b \rightarrow d$ flavor-changing neutral current transitions, respectively. Another charmless B decay $B^0 \rightarrow K^+ \pi^- K^+$, which proceeds through $b \rightarrow d$ penguin process, is also studied. Strong evidence of localized A_{CP} was observed in a similar decay $B^+ \rightarrow K^+ K^- \pi^+$ by Belle, and in the presentation, differential A_{CP} and BF measurements as a function of $K^- K^+$ invariant mass are reported in addition to the total A_{CP} and BF measurements. We also cover A_{CP} of $B^0 \rightarrow D^0 (K^+ \pi^-) \pi^0$ and $B^0 \rightarrow D^0 (K^+ \pi^-) \pi^0$ decays, which provide an interesting probe of subtle interference effects via CKM disfavoured transitions. Finally, we report on our latest measurements of $B^+ \rightarrow D^{(*)} K^+$ decay, sensitive to CKM unitarity triangle angle γ/ϕ_3 , involving D decays to $K^+ \pi^-$, CP eigenstates and the almost pure CP even state $\pi^+ \pi^- \pi^0$. The analyses are based on the full data set recorded by the Belle detector at the $Y(4S)$ resonance containing 772 million $B\bar{B}$ pairs.

Primary authors: NISHIDA, Shohei (KEK); HSU, Chia-Ling (University of Sydney)

Presenter: HSU, Chia-Ling (University of Sydney)

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