

Study of time-dependent and direct CP violation at Belle

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We present the first measurement of CP -violation parameters in a time-dependent angular analysis of the decay channel $B^0 \rightarrow D^{*\pm} \rho^\mp$. Thanks to the angular analysis of the vector-vector final state, all the information necessary to extract $2\phi_1 + \phi_3$ can be determined from this decay. This is in contrast to $B^0 \rightarrow D^{(*)\pm} \pi^\mp$, where $SU(3)$ flavour assumptions or QCD calculations are required to determine CP -violation parameters. The prospects for this measurement at Belle II will be discussed. We also report a new measurement of time-dependent CP violation in $B \rightarrow K_S^0 K_S^0 K_S^0$, and direct CP violation in $B \rightarrow D^0 \pi^0$. These studies are based on the full Belle data set of 772×10^6 $B\bar{B}$ pairs collected at the $\Upsilon(4S)$ resonance.

I read the instructions

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