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## Exclusion of multifold solutions of the CKM Unitarity Triangle by a time-dependent Dalitz plot analysis of $B^0 \rightarrow D^{(*)} h^0$ with $D \rightarrow K_S^0 \pi^+ \pi^-$ decays combining BaBar and Belle data

We present results of a new analysis campaign, which combines the final data samples collected by the B factory experiments BaBar and Belle in single physics analyses to achieve a unique sensitivity in time-dependent CP violation measurements. The data samples contain  $(471 \pm 3) \times 10^6 B\bar{B}$  pairs recorded by the BaBar detector and  $(772 \pm 11) \times 10^6 B\bar{B}$  pairs recorded by the Belle detector in  $e^+e^-$  collisions at the center-of-mass energies corresponding to the mass of the  $\Upsilon(4S)$  resonance at the asymmetric-energy B factories PEP-II at SLAC and KEKB at KEK, respectively. We present a measurement of  $\sin(2\beta)$  and  $\cos(2\beta)$  by a time-dependent Dalitz plot analysis of  $B^0 \rightarrow D^{(*)} h^0$  with  $D \rightarrow K_S^0 \pi^+ \pi^-$  decays. A first evidence for  $\cos(2\beta) > 0$ , the exclusion of trigonometric multifold solutions of the Unitarity Triangle and an observation of CP violation are reported.

### Experimental Collaboration

BABAR and BELLE

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