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CP violation and mixing in charm decays at Belle

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We have searched for CP violation of charmed mesons in the decays D −> K0_S P, where D denotes D0, Dˆ+ and D_sˆ+, and P denotes the pseudo-scalar mesons \piˆ+, Kˆ+, \pi0, eta and etaˆ'. No evidence of CP violation in these decays is observed. We have measured the CP asymmetry difference between the Cabibbo suppressed decay Dˆ+ −> phi piˆ+ and the Cabibbo favored D_sˆ+ −> phi piˆ+ decays. The measured asymmetry is corrected for the residual asymmetry due to detector effects, and the contributions of both CP and forward-backward asymmetries are determined. We also present a measurement of D0-anti-D0 mixing parameters in three-body D0 decays using a time-dependent Dalitz plot analysis. These results are obtained on a large data sample collected at and near the Upsilon(4S) resonance with the Belle detector operating at the KEKB asymmetric-energy eˆ+ eˆ- collider.

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