

Measurements of charm mixing and CP asymmetries in CDF data

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The full CDF Run II data set, corresponding to an integrated luminosity of nearly 10 fb^{-1} of proton-antiproton collisions at 1.96 TeV, is used to measure mixing and CP asymmetries in charm mesons. The large number of reconstructed charm decays are used to measure CP asymmetries are measured for a number of decay modes. Mixing of D^0 and D^0 -bar mesons is observed with a significance corresponding to 6.1 Gaussian sigmas in the time-dependent ratio of decay rate for $D^0 \rightarrow K^+ \pi^-$ to that for $D^0 \rightarrow K^- \pi^+$. The mixing parameters are measured to be $R_D = (3.51 \pm 0.35) 10^{-3}$, $x'^2 = (0.08 \pm 0.18) 10^{-3}$, and $y' = (4.3 \pm 4.3) 10^{-3}$.

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