Heavy Quarks & Leptons



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Precision measurements of direct CP violation in D0->pipi and D0-D0bar mixing at CDF

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We present a new analysis that measures CP-violating asymmetries in D*-tagged D^0->pi^+pi^- decays, where any enhancement from the standard model prediction (of the order of 10^-3) would be unambiguous evidence for New Physics.

A technique combining asymmetries of pi^+pi^- , and $K^-pi^+ D^0$ decays highly suppresses systematic uncertainties due to detector charge-asymmetric efficiencies allowing a measurement limited only by statistical uncertainties.

In addition, we report an updated measurement of D0-D0bar mixing based on the time-dependent ratio of the decay rates for $D^0 - K^+ pi^-$ and $D^0 - K^- pi^+$. Both measurements are based on a sample corresponding to an integrated luminosity of 5.2 fb⁻¹.

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