



Contribution ID: 44

Type: oral

## Precision measurements of direct CP violation in $D^0 \rightarrow \pi^+\pi^-$ and $D^0$ - $D^0$ bar mixing at CDF

*Wednesday, 13 October 2010 11:35 (20 minutes)*

We present a new analysis that measures CP-violating asymmetries in  $D^*$ -tagged  $D^0 \rightarrow \pi^+\pi^-$  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  $D^0$ - $D^0$ bar mixing based on the time-dependent ratio of the decay rates for  $D^0 \rightarrow K^+\pi^-$  and  $D^0 \rightarrow K^-\pi^+$ . Both measurements are based on a sample corresponding to an integrated luminosity of  $5.2 \text{ fb}^{-1}$ .

**Primary author:** DI CANTO, Angelo

**Presenter:** DI CANTO, Angelo

**Session Classification:** CP Violation

**Track Classification:** CP Violation