Measurement of Branching Fraction and CP Asymmetry in $B^- \to D_{DCS}^0 \pi^-$

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The CKM angle $\gamma$ can be cleanly determined from CP asymmetries in suppressed $B^- \to D^0 K^-$ decays, where it enters at tree-level. The decays where the $D^0$ goes into the doubly Cabibbo-suppressed mode $D_{DCS}^0 \to K^- \pi^+$ are particularly useful in this respect, but they are very rare and have not yet been observed, while only a few tens of events have been reconstructed for the less rare $B^- \to D_{DCS}^0 \pi^-$ decay mode. We present the first analysis of these modes performed in $p\bar{p}$ collisions, using a sample of about 2 fb$^{-1}$ of data collected by the CDF Collaboration with an impact-parameter trigger. We report preliminary measurements of the branching fraction and CP asymmetry for the $B^- \to D_{DCS} \pi^-$ decay mode.

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