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Search for Charm Mixing with Flavor Tagged Dalitz Plots from $\psi(3770) \rightarrow D\bar{D}$ ERIC WHITE, University of Illinois, CLEO COLLABORATION
— A quantum correlated ($C=-1$) $D\bar{D}$ state is produced from $\psi(3770) \rightarrow D\bar{D}$. Reconstructing one of the D mesons as a CP eigenstate, $y = \Delta\Gamma/2\Gamma$ can be determined by measuring the flavor specific branching ratios of the other meson. The flavor tag width is independent of the CP quantum number however the branching ratio is inversely proportional to the total width. Consequently, charm threshold experiments have time-integrated sensitivity to y . Several multi-body D^0 decays proceed through intermediate states that are CP eigenstates, such as $D^0 \rightarrow K_S^0 f_0, f_0 \rightarrow \pi\pi$ and $D^0 \rightarrow \rho\pi^0, \rho \rightarrow \pi\pi$. The presence of mixing through y would introduce an intensity modulation across the Dalitz plot (for flavor tagged D 's relative to the Dalitz plot observed in uncorrelated production) as a function of the CP of the contributing amplitudes. We present a study of the sensitivity to y with the anticipated CLEO-c data set.

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