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CP asymmetries in $B \rightarrow \pi^+\pi^-K_S, K^+K^-K_S$ Decays in the $f_0(980)$ Mass Region RUPAK DUTTA, SUSAN GARDNER, University of Kentucky —
We consider the branching ratios and direct and time-dependent asymmetries in $B \rightarrow f_0(980)K_S \rightarrow (\pi^+\pi^-, K^+K^-)K_S$ decays to the end of determining the deviation of the time-dependent asymmetry from $\sin(2\beta)$ arising from Standard Model physics. We construct the $f_0(980)$ from isospin-zero $\pi^+\pi^-$ and K^+K^- final states, employing scalar form factors consistent with chiral constraints at low energies and utilize QCD factorization for the $B \rightarrow f_0(980)K_S$ decay amplitudes.

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