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Search for Direct CP Violation in the Decay of $K^{\pm} \to \pi^{\pm}\pi^{\pm}\pi^{\mp}$ WOON-SENG CHOONG, University of California, Berkeley — A sensitive search for direct CP violation is underway in the HyperCP experiment at FNAL. The experiment took data in the fixed target run that ended in September 1997. The primary goal of the experiment is to search for possible CP violation in $\Lambda(\bar{\Lambda})$ and $\Xi^-(\bar{\Xi}^+)$ decays. In addition to collecting the largest sample of hyperon decays in the world, the experiment has collected a large sample of charged kaon decays which gives us another channel to search for possible CP violation. The Dalitz plots of $K^{\pm} \to \pi^{\pm}\pi^{\pm}\pi^{\mp}$ are measured. Any difference in the distributions of the Dalitz plot is evidence for CP violation. Based on the data collected, we expect to reach a statistical sensitivity of 7×10^{-4} in the asymmetry of the linear slope parameter of the Dalitz plots. The status of the analysis of CP violation in the charged kaon decays will be presented.

- [X] Prefer Oral Session
- [ ] Prefer Poster Session

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