Precision Measurements with the HyperCP Spectrometer at Fermilab

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The HyperCP collaboration at Fermilab has built an extremely high rate spectrometer which is being used to make high-statistics studies of charged hyperon and kaon decays. The experiment collected 231 billion events in about nine months of running. The primary goal of HyperCP is a sensitive search for CP violation in Λ and $\overline{\Lambda}$ decays through a comparison of the decay angular distributions. Other physics goals include a search for CP violation in charged kaon decays, the search for rare and forbidden decays of hyperons and kaons, and measurements of static properties of hyperons. The HyperCP physics program will be reviewed briefly, and our CP search results will be presented as well as our new measurement of the branching ratios of the flavor changing neutral current decays: $K^{\pm} \to \pi^{\pm}\mu^{+}\mu^{-}$. This is the first observation of the $K^{-} \to \pi^{-}\mu^{+}\mu^{-}$ decay.