Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Measurement of the branching fraction for $D^0 \to K^0_s K^0_s \pi^+ \pi^-$ and measurement of CP violation using T-odd triple product asymmetry at Belle. AMAN SANGAL, ALAN SCHWARTZ, University of Cincinnati, BELLE COLLABORATION — In this analysis, we have measured the branching fraction and searched for CP violation using T-odd triple product asymmetries in the singly Cabibbo-suppressed four body final state decay $D^0 \to K^0_s K^0_s \pi^+ \pi^-$. For the analysis, we are using a data sample corresponding to an integrated luminosity of 932 fb^{-1}. The data were collected using Belle detector at KEKB asymmetric e^+e^- collider running at or near Υ(4S) and Υ(5S) resonances. Charm decays are expected to have very small CP violation in the standard model, this makes CP violation searches in charm decays an excellent probe of physics beyond standard model. We have probed the asymmetries in the observable $C_T = P^1_{K^0_s} \cdot (P_{\pi^+} \times P_{\pi^-})$ for D^0 and $\overline{D}^0$. Looking at the difference of T-odd asymmetries between CP conjugate D^0 and $\overline{D}^0$ decays provides us a CP asymmetry observable free from strong interaction effects.

Aman Sangal
University Of Cincinnati

Date submitted: 11 Jan 2021 Electronic form version 1.4