Contribution ID: **13** Type: **not specified**

Measurement of Direct CP Violation, CPT Symmetry from the KteV Experiment

Wednesday 6 October 2010 11:00 (30 minutes)

Precise measurements of CP and CPT symmetry based on the full dataset of K -> pi pi decays collected by the KTeV experiment at Fermi National Accelerator Laboratory during 1996, 1997, and 1999 are presented. The direct CP violation parameter Real(epsilon'/epsilon) is determined to 10% accuracy: Real(epsilon'/epsilon)=(19.2 \pm 2.1)x10^{-4}. Several parameters that test CPT invariance are measured as well. We find the phase of the indirect CP violation parameter epsilon, \phi_{\epsilon}~=~(44.09 \pm 1.00). We measure the difference of the relative phases between the CP violating and CP conserving decay amplitudes for K to pi^+ pi^- and for K to pi^0pi^0, \delta\phi = (0.29 $\pm$ 0.31). From these phase measurements, we place a limit on the mass difference between K_0 and \bar{K_0} mesons, \Delta M < 4.7x10^{-19} GeV at 95% C.L. These results are consistent with those of other experiments, our own earlier measurements, and CPT symmetry.

Presenter: Prof. GLAZOV, Alexander (DESY, Germany)

Session Classification: CP and CPT Violation