



Contribution ID: 12

Type: **not specified**

Experimental tests of CPT symmetry and quantum mechanics in the neutral kaon system

Thursday 30 August 2007 10:45 (45 minutes)

The neutral kaon system offers a unique possibility to perform fundamental tests of CPT invariance, as well as of the basic principles of quantum mechanics.

The most recent limits on CPT violation will be reviewed, including the ones based on the Bell-Steinberger relation, related to possible decoherence mechanisms, or Lorentz symmetry breaking.

Quantum coherence and other QM tests performed by studying the time evolution of correlated kaon pairs will also be reviewed.

The results show no deviations from the expectations of quantum mechanics and CPT symmetry, while the accuracy reaches the interesting region of the Planck's scale.

Finally, perspectives on this kind of experimental studies will be presented.

Presenter: Prof. DI DOMENICO, Antonio (University of Rome "La Sapienza")

Session Classification: CP and T Violation