

Review on CPT and decoherence measurements with Kaons

Wednesday, 23 May 2007 10:30 (30 minutes)

Neutral kaons provide one of the most sensitive systems to quantum mechanics and CPT violation. In the first part of the talk, I will review results on CPT violation searches in the kaon system from the CPLEAR, KLOE and KTeV experiments. In the second part I will present tests of quantum coherence related to CPT violation performed at CPLEAR and KLOE by studying the time evolution of the kaon system. The results show no deviations from the expectations of quantum mechanics and CPT symmetry and the accuracy reaches the interesting region of the Planck's scale.

I will conclude showing the perspectives on CPT and quantum mechanics tests at a future high-luminosity phi-factory.

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Session Classification: Session IV

Track Classification: CPT and QM tests