

Discrete symmetries studies at KLOE-2

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Collaboration

KLOE-2 Collaboration

Abstract content

The KLOE and KLOE-2 experiments at the Laboratori Nazionali di Frascati (Italy) collected almost 8 fb^{-1} of integrated luminosity at the ϕ -meson mass energy. The excellent time resolution of the electromagnetic calorimeter and the very good accuracy on both momentum and vertex reconstruction of the tracking system allow to study discrete symmetries to the utmost precision as well as light meson spectroscopy, dark forces searches, hadronic cross-section measurements and studies of gamma gamma-physics. CPT symmetry test with the lepton charge asymmetry measured in K_S semileptonic decays with 1.7 fb^{-1} of KLOE data, tests of Time reversal and CPT in transitions in $\phi \rightarrow K_S K_L \rightarrow \pi e \nu$, $3\pi^0(2\pi^0)$ decays and search for the CP violating $K_S \rightarrow 3\pi^0$ decay with newly acquired data with the KLOE-2 detector will be presented and discussed.

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