



Contribution ID: 112

Type: **not specified**

U boson searches at KLOE-2

Friday, 10 December 2010 14:50 (25 minutes)

The possible existence of a new light vector boson mediator of a gauge interaction under which SM particles are neutral and which couples with the SM via a kinetic mixing mechanism has recently been postulated by several authors. Such particle can be produced in e^+e^- collisions and/or decays of vector bosons and be visible in existing experiments, provided that the mixing parameter is of order of 10^{-2} - 10^{-3} .

These new gauge interaction can potentially have a rather complex structure, for instance there could be a specific Higgs sector, different from the SM one, resulting in many possible signatures for its existence.

We present searches performed using the data acquired by the KLOE detector at DAFNE, the Frascati ϕ -factory of INFN. Signals from both the continuum and from ϕ meson decays have been analysed, from which preliminary limits for the mixing parameter can be derived.

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Session Classification: Cosmology and astroparticles, dark matter (3)

Track Classification: Cosmology and astroparticles, dark matter searches