

Cardone, Fabio; Mignani, Roberto

Metric description of interactions in a deformed Minkowski spacetime. (English)

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Summary: A recent analysis of the experimental data on some physical phenomena governed by the four fundamental interactions (i.e. the superluminal propagation of evanescent electromagnetic waves in waveguides; the mean lifetime of the meson K^0_S ; the Bose-Einstein correlation in pion production, the slowing-down of clocks in the gravitational field of the Earth) seems to show the possibility of describing such processes (and the corresponding interactions) in terms of a “deformation” of the usual Minkowski spacetime, with a metric whose coefficients depend on the energy of the process considered.

MSC:

83D05 Relativistic gravitational theories other than Einstein's, including asymmetric field theories

Cited in **2** Documents

83B05 Observational and experimental questions in relativity and gravitational theory

Keywords:

deformation; slowing-down of clocks in the gravitational field; Minkowski spacetime