

About leptons in theory of space-time film

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Nonlinear field model of extremal space-time film is considered [1-3]. Its space-localized solution in toroidal coordinates with periodic dependence on time is investigated. In particular, we consider the field configuration having a form of the twisted lightlike soliton moving along the singular ring of the coordinate system. The solutions in the form of twisted lightlike solitons was considered in the work [1]. As was shown in this work, the subclass of such solitons can be conformed to real photons. In the present talk, we consider approximate time-periodic toroidal solutions. The approximate solutions are represented in the form of finite Fourier sums on the circular wave phase and the polar toroidal coordinate. The dependence of the solution on the radial toroidal coordinate is approximated by a fractional-rational function from the exponent of the coordinate. The phase of the circular wave is linearly dependent both on time and the azimuthal toroidal coordinate. The obtained solutions have the electrical charge and finite energy and angular momentum or spin. The question as to the relation these solutions to leptons is considered.

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