

OCTONIONIC GEOMETRY

Merab GOGBERASHVILI

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Abstract

The seminar will be devoted to the applications of hyper-complex numbers in physics. The model where physical signals are described by split octonions will be presented. Eight real parameters of octonions are interpreted as space-time coordinates, energy and momentum. In this approach both the velocity of light and Planck's constants have a similar geometrical meaning and arise from the condition of positive definiteness of norms. Generalized Lorentz factor contains 'quantum' term that disappears in classical limit. It will be shown how the Maxwell and Dirac equations can be written as the simple octonionic continuity conditions.