

Abstract Submitted
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Relativistic Mass Change in the Fields of Gravitation, Non-Holonomy, and Deformation DMITRI RABOUNSKI — This study targets solving the scalar geodesic equation (equation of energy) of a mass-bearing particle travelling in the gravitational field, the field of non-holonomy (rotation) of space, and the field of deformation of space, which are the only three external factors present in the equation. The obtained solutions manifest a change in the mass of the particle according to the distance travelled in the corresponding field. The mass defect due to the field of gravitation is known. The effects of the fields of space non-holonomy and space deformation have not been studied before. In contrast to the gravitational mass defect, registered in the gravitational field near the Earth, these two effects are much smaller: they reach the measurable limit 10^{-10} only in space travel within cosmological distances. A complete report of this study has been submitted to The Abraham Zelmanov Journal.

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