Year: 1993 | Vol.: 42 | Fasc.: 3-4

Title: Geometry of space-time and generalised Lagrange gauge theory

Author(s): R. Miron, R.K. Tavakol, V. Balan and I. Roxburgh

In §1 and §2 the authors present the Einstein and Maxwell equations for the generalised Lagrange space $GL^n = (M, g_{ij}(x, y) = e^{2\sigma(x,y)}\gamma_{ij}(x))$, and characterize the case of vanishing mixed curvature tensor field of the canonical linear *d*-connection. The Lagrangian gauge theory in G.S. Asanov's sense [1] is developed in §3 for the tangent bundle endowed with (h, v)-metrics, obtaining the generalised Einstein - Yang Mills equations with respect to the metric gauge tensor fields and to the gauge field $\gamma(x, y)$ for three remarkable cases in which the metrics are derived from the fundamental tensor field $g_{ij}(x, y)$. Proofs are, in most cases, mechanical but rather tedious calculations. They are omitted.

Address:

R. Miron University "Al.I. Cuza" Iasi Faculty of Mathematics 6600 Iasi Romania

Address:

R.K. Tavakol Univ. of London, School of Mathematics Queen Mary & Westfield College Mile End Rd., E1 4NS, London, U.K.

Address:

V. Balan Polytechnic Inst. Bucharest Department of Mathematics I Splaiul Independentei 313 Bucharest, Romania

Address:

I. Roxburgh Univ. of London, Astronomy Unit Scholl of Math. Sci. QMW College Mile End Rd., E1 4NS, London, U.K.