

1. Record Nr.	UNINA9910831045203321
Autore	Balan Vladimir <1958->
Titolo	Jet single-time Lagrange geometry and its applications [[electronic resource] /] / Vladimir Balan, Mircea Neagu
Pubbl/distr/stampa	Hoboken, N.J., : John Wiley & Sons, c2011
ISBN	1-283-28286-0 9786613282866 1-118-14378-7 1-118-14375-2 1-118-14376-0
Descrizione fisica	1 online resource (212 p.)
Classificazione	MAT012000
Altri autori (Persone)	NeaguMircea <1973->
Disciplina	530.14/3 530.143
Soggetti	Geometry, Differential Lagrange equations Field theory (Physics)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Jet Single-Time Lagrange Geometry and Its Applications; CONTENTS; Preface; PART I THE JET SINGLE-TIME LAGRANGE GEOMETRY; 1 Jet geometrical objects depending on a relativistic time; 1.1 d-tensors on the 1-jet space $J^1(R, M)$ ; 1.2 Relativistic time-dependent semisprays. Harmonic curves; 1.3 Jet nonlinear connections. Adapted bases; 1.4 Relativistic time-dependent semisprays and jet nonlinear connections; 2 Deflection d-tensor identities in the relativistic time-dependent Lagrange geometry; 2.1 The adapted components of jet -linear connections; 2.2 Local torsion and curvature d-tensors 2.3 Local Ricci identities and nonmetrical deflection d-tensors3 Local Bianchi identities in the relativistic time-dependent Lagrange geometry; 3.1 The adapted components of h-normal -linear connections; 3.2 Deflection d-tensor identities and local Bianchi identities for d-connections of Cartan type; 4 The jet Riemann-Lagrange geometry of the relativistic time-dependent Lagrange spaces; 4.1 Relativistic time-dependent Lagrange spaces; 4.2 The canonical nonlinear connection;

4.3 The Cartan canonical metrical linear connection; 4.4 Relativistic time-dependent Lagrangian electromagnetism  
 4.4.1 The jet single-time electromagnetic field 4.4.2 Geometrical Maxwell equations; 4.5 Jet relativistic time-dependent Lagrangian gravitational theory; 4.5.1 The jet single-time gravitational field; 4.5.2 Geometrical Einstein equations and conservation laws; 5 The jet single-time electrodynamics; 5.1 Riemann-Lagrange geometry on the jet single-time Lagrange space of electrodynamics  $DL1n$ ; 5.2 Geometrical Maxwell equations on  $DL1n$ ; 5.3 Geometrical Einstein equations on  $DL1n$ ; 6 Jet local single-time Finsler-Lagrange geometry for the rheonomic Berwald-Moor metric of order three  
 6.1 Preliminary notations and formulas 6.2 The rheonomic Berwald-Moor metric of order three; 6.3 Cartan canonical linear connection, d-torsions and d-curvatures; 6.4 Geometrical field theories produced by the rheonomic Berwald-Moor metric of order three; 6.4.1 Geometrical gravitational theory; 6.4.2 Geometrical electromagnetic theory; 7 Jet local single-time Finsler-Lagrange approach for the rheonomic Berwald-Moor metric of order four; 7.1 Preliminary notations and formulas; 7.2 The rheonomic Berwald-Moor metric of order four; 7.3 Cartan canonical linear connection, d-torsions and d-curvatures 7.4 Geometrical gravitational theory produced by the rheonomic Berwald-Moor metric of order four 7.5 Some physical remarks and comments; 7.5.1 On gravitational theory; 7.5.2 On electromagnetic theory; 7.6 Geometric dynamics of plasma in jet spaces with rheonomic Berwald-Moor metric of order four; 7.6.1 Introduction; 7.6.2 Generalized Lagrange geometrical approach of the non-isotropic plasma on 1-jet spaces; 7.6.3 The non-isotropic plasma as a medium geometrized by the jet rheonomic Berwald-Moor metric of order four  
 8 The jet local single-time Finsler-Lagrange geometry induced by the rheonomic Chernov metric of order four

---

Sommario/riassunto

Develops the theory of jet single-time Lagrange geometry and presents modern-day applications Jet Single-Time Lagrange Geometry and Its Applications guides readers through the advantages of jet single-time Lagrange geometry for geometrical modeling. With comprehensive chapters that outline topics ranging in complexity from basic to advanced, the book explores current and emerging applications across a broad range of fields, including mathematics, theoretical and atmospheric physics, economics, and theoretical biology. The authors begin by presenting basic theoretical

---