# PUBLICATION  LIST

## *Sergiu I. Vacaru*

| | | |
|---|---|---|
| **A.** Articles, Western editors | **149** | |
| **B.** Articles, Eastern editors | **43** | |
| **C.** Monographs | **2** | |
| Collection of works | **1** | |
| Textbooks and courses | **8** | |
| Encyclopedia/ book reviews | **2** | |

Published/accepted:  149+ 43 +2+1 +8 + 2 = 205

| | | |
|---|---|---|
| **D.** Preprints and under elaboration | **21** | |
| **E.** Conferences, seminars, visits | **161** | |
| **F.** Articles (newspapers) | **3** | |
| | Total: | **390** |

Inverse chronological enumeration, see also Links to web publication lists:  Spires:
http://inspirehep.net/search?ln=en&ln=en&p=f+a+Vacaru&of=hb&action_search=Search&sf=earliestdate&so=d&rm=&rg=250&sc=0
Arxiv.org, http://arxiv.org/find/grp_physics,grp_math/1/au:+Vacaru/0/1/0/all/0/1
Web, http://www.scribd.com/people/view/1455460-sergiu
Web of Science Researcher ID: H-3292-2011 and https://orcid.org/0000-0001-9187-4878
With red/colors, there are marked the papers that won or are eligible for 1300E - 450E and (in 2009) 100E grants in the competition of articles supported by the Romanian Government, RG-competition

## A Articles in International Journals and Collections of Works (reviewed, ISI)

### 2022
**149)** Iuliana Bubuianu, S. Vacaru and Elsen Veli Veliev, Quantum geometric information flows and relativistic generalizations of Grigory Perelman thermodynamics for nonholonomic Einstein systems with black holes and stationary solitonic hierarchies, **Quantum Inf.  Process, QINP,** 21 (2022) 51; arXiv: 1907.03541 [physics.gen-ph]

### 2021
**148)** Laurentiu Bubuianu, S. Vacaru and Elsen Veli Veliev, Nonassociative black ellipsoids distorted by R-fluxes and four dimensional thin locally anisotropic accretion disks, **Eur. Phys. J.** C **81** (2021) 1145; arXiv: 2108.04689 [physics.gen-ph]

**147)** Iuliana Bubuianu and S. Vacaru, Constantin Caratheodory axiomatic approach and Grigory Perelman thermodynamics for geometric flows and cosmological solitonic solutions, **Eur. Phys. J. Plus 136** (2021) 588; arXiv: 2003.11380v1 [physics.gen-ph]

**146)** Elsen Veli Veliev, Laurentiu Bubuianu, and Sergiu I. Vacaru, Decoupling and integrability of nonassociative vacuum phase space gravitational equations with star and R-flux parametric deformations, **Fortschr. Phys. 69** (2021) 2100030; arXiv: 2106.01869 [physics.gen-ph]

**145)** S. Vacaru, Elsen Veli Veliev, and Laurentiu Bubuianu,  Nonassociative  geometry of nonholonomic phase spaces with  star R-flux string deformations and (non) symmetric metrics, **Fortschr. Phys. 69** (2021) 2100029; arXiv: 2106.01320 [physics.gen-ph]

**144)** P. Stavrinos and S. Vacaru, Broken scale invariance, gravity mass, and dark energy in modified Einstein gravity with two measure Finsler like variables, **Universe 7** (2021) 89; arXiv: 2106.00462 [physics.gen-ph]

**143)** Iuliana Bubuianu, S. Vacaru and Elsen Veli Veliev, Kaluza-Klein gravity & cosmology emerging from G. Perelman's entropy functionals and quantum geometric information flows, **Eur. Phys. J. Plus 136** (2021) 149; arXiv: 1907.05847v4 [physics.gen-ph]

**142)**  S. Vacaru. E. Veliev and L. Bubuianu, Off-diagonal cosmological solutions in emergent gravity theories and Grigory Perelman entropy for geometric flows,   **Eur. Phys. J.** C **81** (2021) 81; arXiv: 1904.05149v3 [physics.gen-ph]

 **2020**
**141)**  Iuliana Bubuianu, S. Vacaru and Elsen Veli Veliev, Entropy functionals and thermodynamics of geometric flows, stationary quasi-periodic Ricci solitons, and gravity, **Annals of Physics**, NY, 423 (2020) 168333; arXiv: 1903.04920v4 [physics.gen-ph]

**140)**  S. Vacaru, Geometric information flows and G. Perelman entropy for relativistic classical and quantum mechanical systems, **Eur. Phys. J.** C **80** (2020) 639; arXiv:  1905.12399 [physics.gen-ph]

**139)**  L. Bubuianu and S. Vacaru, Quasi-stationary solutions in gravity theories with modified dispersion relations and Finsler-Lagrange-Hamilton geometry, **Eur. Phys. J.** P 135 (2020) 148; arXiv: 1806.04500 [physics.gen-ph]

**2019**
**138)**  S. Vacaru and L. Bubuianu, Classical and quantum geometric information flows and entanglement of relativistic mechanical systems, **Quantum Inf.  Process, QINP** 18 (2019) 376; arXiv: 1905.13015 [physics.gen-ph]

**137)**  L. Bubuianu and S. Vacaru, Black holes with MDRs and Bekenstein-Hawking and Perelman entropies for Finsler-Lagrange-Hamilton spaces, **Annals of Physics**, NY, 404 (2019) 10-38;  arXiv: 1812.02590 [physics.gen-ph]

**136)**  L. Bubuianu and S. Vacaru, Dynamical Equations and Lagrange-Ricci Flow Evolution on Prolongation Lie Algebroids, **Can. J. Phys**.,  97  (2019) 133-144 ; arXiv: 1108.4333v3 [math-ph];  https://doi.org/10.1139/cjp-2018-0158

**2018**
**135)** L. Bubuianu and S. Vacaru, Axiomatic formulations of modified gravity theories with nonlinear dispersion relations and Finsler-Lagrange-Hamilton geometry, **Eur. Phys. J.** C **78** (2018) 969

**134)** S. Vacaru, Space-Time quasicrystal structures and inflationary and late time evolution dynamics in accelerating cosmology, **Class. Quant. Grav. 35** (2018) 245009;   arXiv: 1803.04810 [physics.gen-ph]

**133)** L. Bubuianu and S. Vacaru, Deforming black hole and cosmological solutions by quasiperiodic and/or pattern forming structures in modified and Einstein gravity, **Eur. Phys. J.** C **78** (2018) 393; arXiv: 1706.02584 [physics.gen-ph]

**132)** R. Aschheim, L. Bubuianu, Fang Fang, K. Irwin, V. Ruchin and S. Vacaru, Starobinsky inflation and dark energy and dark matter effects from quasicrystal like spacetime structure, **Annals of Physics**, NY, 394 (2018) 120-138; arXiv: 1611.04858 [physics.gen-ph]

**2017**
**131)** M. M. Amaral, R. Ashheim, L. Bubuianu, K. Irwin, S. I. Vacaru, and D. Woolridge, Anamorphic quasiperiodic universes in modified and Einstein gravity with loop quantum gravity corrections, **Class. Quant. Grav. 34** (2017) 185002; arXiv: 1611.05295 [physics.gen-ph]

**130)** S. Rajpoot and S. Vacaru, On supersymmetric geometric flows and R2 inflation from scale invariant supergravity, **Annals of Physics**, NY, 384 (2017) 20-60;  arXiv: 1606.06884 [hep-th]

**129)** S. Rajpoot and S. Vacaru, Cosmological Attractors and Anisotropies in two Measure Theories, Effective EYMH systems, and Off-diagonal Inflation Models, **Eur. Phys. J.** C **77** (2017) 313; arXiv: 1610.01090 [physics.gen-ph]

**128)** V. Ruchin, O. Vacaru and S. Vacaru, Perelman's W-entropy and Statistical and Relativistic Thermodynamic Description of Gravitational Fields, **Eur. Phys. J.** C **77** (2017) 184; arXiv: 1312.2580 [gr-qc]

**127)** L. Bubuianu, K. Irwin and S. Vacaru, Heterotic supergravity with internal almost-Kaehler spaces; instantons for SO(32), or E8 x E8, gauge groups; and deformed black holes with soliton, quasiperiodic and/or pattern-forming structures, **Class. Quant. Grav. 34** (2017) 075012; arXiv: 1611.00223 [physics.gen-ph]

**126)** S. Vacaru and K. Irwin, Off-diagonal deformations of Kerr metrics and black ellipsoids in heterotic supergravity, **Eur. Phys. J.** C **77** (2017) 17; arXiv: 1608.01980 [hep-th]

**125)** S. Rajpoot and S. Vacaru, Nonholonomic Jet Deformations, Exact Solutions for Modified Ricci Soliton and Einstein Equations, **Int. J. Geom. Meth. Mod. Phys. 14** (2017) 1750032, arXiv: 1411.1861 [math-ph]

**124)** S. Rajpoot, and S. Vacaru, Generic off-diagonal solutions and jet deformations in modified and/or higher dimension gravity theories, in: *Proceedings, 14th Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Astrophysics, and Relativistic Field Theories (MG14)*, Rome, Italy, July 12-18, 2015, Conference C15-07-12 (2017) 2727-22731

**123)** M. Alexiou, T. Gheorghiu, P. Stavrinos, O. Vacaru, and S. Vacaru, Nonholonomic Ricci flows and Finsler-Lagrange f(R,F,L)-modified gravity and dark matter effects, in: *Proceedings, 14th Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Astrophysics, and Relativistic Field Theories (MG14)*, Rome, Italy, July 12-18, 2015, Conference C15-07-12 (2017) 2371-2375

**122)** S. Vacaru, Locally anisotropic cosmological systems in modified two measure and massive gravity theories, in: *Proceedings, 14th Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Astrophysics, and Relativistic Field Theories (MG14)*, Rome, Italy, July 12-18, 2015, Conference C15-07-12 (2017) 1509-1513

**121)** T. Gheorghiu, O Vacaru, and S. Vacaru, Off-diagonal wormhole and black hole deformations and dark energy in two measure/ bi-metric modified gravity theories, in: *Proceedings, 14th Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Astrophysics, and Relativistic Field Theories (MG14)*, Rome, Italy, July 12-18, 2015, Conference C15-07-12 (2017) 1437-1441

**120)** S. Rajpoot and S. Vacaru, Geometric methods for constructing cosmological solutions for EYMH systems in two measure, f(R) and massive gravity theories, in: *Proceedings, 14th Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Astrophysics, and Relativistic Field Theories (MG14)*, Rome, Italy, July 12-18, 2015, Conference C15-07-12 (2017) 1239-1243

**2016**
**119)** T. Gheorghiu, V. Ruchin, O. Vacaru and S. Vacaru, Geometric flows and Perelman's thermodynamics for black ellipsoids in R2 and Einstein gravity theories; **Annals of Physics**, NY, 369 (2016) 1-35; arXiv: 1602.08512

**118)** S. Vacaru, Off-diagonal ekpyrotic scenarios and equivalence of modified, massive and/or Einstein gravity, **Phys. Lett.** B 752 (2016) 27-33; arXiv: 1304.1080 [physics.gen-ph]

**117)** S. Vacaru, Noncommutative Einstein, almost Kaehler – Finsler and quantum deformations. Chapter 24 in: "The Algebraic Way. Space, Time and Quantum Beyond Peaceful Coexistence", ed. Ignazio Licata (World Scientific, Singapore, 2016), pp. 661-695; ISBN: 978-1-78326-831-3

**116)** Maria Alexiou, P. Stavrinos and S. Vacaru, Nonholonomic Ricci flows of Riemann metrics and Lagrange-Finsler geometry, **J. Phys. Math**. 7 (2016) 2 [14 pages]; arXiv: math.DG/ 0612162

**2015**
**115)** S. Vacaru, Almost Kaehler Ricci flows and Einstein and Lagrange-Finsler structures on Lie algebroids, **Medit. J. Math**. 12 (2015) 1397-1427; arXiv: 1306.2813 [math.DG]

**114)** S. Rajpoot and S. Vacaru, Black ring and Kerr ellipsoid – solitonic configurations in modified Finselr gravity, **Int. J. Geom. Meth. Mod. Phys. 12** (2015) 1550102; arXiv: 1506.08696

**113)** E. Elizalde and S. Vacaru, Einstein spaces modeling nonminimal modified gravity, **Eur. Phys. J.** P 130 (2015) 119; arXiv: 1506.09148 [gr-qc]

**112)** E. Elizalde and S. Vacaru, Effective Einstein cosmological spaces for non-minimal modified gravity, **Gen. Relativity Grav. 47** (2015) 64; arXiv: 1310.6868

**111)** S. Vacaru, Spinors and twistor geometry in Einstein gravity and Finsler modifications, **Advances in Applied Clifford Algebras 25** (2015) 453-485; arXiv: 1206.4012 [math-ph]

**110)** S. Vacaru, Generic off-diagonal solutions and solitonic hierarchies in Einstein and modified Gravity, **Mod. Phys. Lett.** A, vol. 30, nr. 19 (2015) 1550090; arXiv: 1308.6180

**109)** S. Vacaru, Equivalent off-diagonal cosmological models and ekpyrotic scenarios in f(R)-modified massive and Einstein gravity, **Eur. Phys. J.** C **75** (2015) 176; arXiv: 1504.04346 [gr-qc] (extended and modified version of arXiv: 1304.1080)

**108)** T. Gheorghiu, O. Vacaru and S. Vacaru, Modified Dynamical Supergravity Breaking and Off-Diagonal Super-Higgs Effects, **Class. Quant. Grav. 32** (2015) 065004; arXiv: 1311.6365 [hep-th]

**107)** S. Vacaru, Covariant Renormalizable Gravity Theories on (Non) Commutative Tangent Bundles, in: **Proceedings of the MG13 Meeting on General Relativity**, Stockholm University, Sweden 1-7 July 2012, The Thirteenth Marcel Grossman Meeting (World Scientific, Singapore, **2015**), ISBN: 978-981-4612-14-2 (hardcover) and ISBN: 978-981-4630-00-9 (e-book); pp. 2206-2208;   arXiv: 1305.1876 [gr-qc];  doi: 10.1142/9789814623995_0398

**106)** S. Vacaru, Cosmological Solutions in Biconnection and Bimetric Gravity Theories, in: **Proceedings of the MG13 Meeting on General Relativity**, Stockholm University, Sweden 1-7 July 2012, The Thirteenth Marcel Grossman Meeting (World Scientific, Singapore, **2015**), ISBN: 978-981-4612-14-2 (hardcover) and ISBN: 978-981-4630-00-9 (e-book); pp. 1276-1278; arXiv: 1304.2916 [gr-qc];  doi: 10.1142/9789814623995_0146

## 2014
**105**) T. Gheorghiu, O. Vacaru and S. Vacaru, Off-Diagonal Deformations of Kerr Black Holes in Einstein and Modified Massive Gravity and Higher Dimensions, **Eur. Phys. J.**  C 74 (2014) 3152; arXiv: 1312.4844 [gr-qc]

**104)** S. Vacaru, E. Veli Veliev and Enis Yazici, A geometric method of constructing exact solutions in modified f(R,T) gravity with Yang-Mills and Higgs Interactions,  **Int. J. Geom. Meth. Mod. Phys. 11** (2014) 1450088; arXiv: 1411.2849

**103)** S. Vacaru, Ghost-free massive f(R) theories modelled as effective Einstein spaces & cosmic acceleration, **Eur. Phys. J.** C **74** (2014) 3132; arXiv: 1401.2882

**102)**  P. Stavrinos, O. Vacaru and S. Vacaru, Off-diagonal solutions in modified Einstein and Finsler theories on tangent Lorentz bundles, **Int. J. Mod. Phys. D 23** (2014) 1450094; arXiv: 1401.2879 [physics.gen-ph]

**101)** S. Vacaru, Exact solutions in modified massive gravity and off-diagonal wormhole deformations, **Eur. Phys. J.** C **74** (2014) 2781; March 31, 2013; arXiv submit/686664'; moderators requested a replacement as arXiv: 1303.3515v2, then accepted a new submission arXiv: 1403.1815 [gr-qc]

**100)** S. Vacaru, Covariant renormalizable modified and massive gravity theories on (non) commutative tangent Lorentz bundles; **Int. J. Geom. Meth. Mod. Phys. 11** (2014) 1450032; arXiv: 1304.1079 [physics.gen-ph]

99) S. Vacaru, Wormholes and off-diagonal solutions in f(R,T), Einstein and Finsler gravity theories, in: (eds.) A. Garcia-Parrado, F. C. Mena, F. Moura. E. Vaz, *Progress in Mathematical Relativity, Gravitation and Cosmology,* Springer

Proceedings in Mathematics & Statistics, 60 (2014) 439-443[Proceedings of Spanish Relativity Meeting ERE2012, Univ.Minho, Guimaraes, Portugal, Sep 3-7, 2012, ISBN:978-3-642-40156-5; DOI 10.1007/978-3-642-40157-2_67]; arXiv: 1303.3515; http://link.springer.com/chapter/10.1007/978-3-642-40157-2_67#page-1

## 2013

**98)** S. Vacaru, Decoupling of field equations in Einstein and modified gravity, **J. Phys.: Conf. Ser. 543** (2013) 012021; arXiv: 1108.2022v3 [physics.gen-ph]

**97)** S. Vacaru, The algebraic index theorem and Fedosov quantization of Lagrange-Finsler and Einstein spaces, **J. Math. Phys.** 54 (2013) 073511; arXiv: 1005.3647 [math-ph]

**96)** P. Stavrinos and S. Vacaru, Cyclic and ekpyrotic universes in modified Finsler osculating gravity on tangent Lorentz bundles, **Class. Quant. Grav. 30** (2013) 055012; arXiv: 1206.3998 [astro-ph.CO]

**95)** S. Vacaru, Hidden symmetries for ellipsoid-solitonic deformations of Kerr-Sen black holes and quantum anomalies, **Eur. Phys. J.** C **73** (2013) 2287; arXiv: 1106.1033 [math-ph]

**94)** S. Vacaru, Black holes, ellipsoids, and nonlinear waves in pseudo-Finsler spaces and Einstein gravity, **Int. J. Theor. Physics 52** (2013) 1654-1681; arXiv: 0905.4401 [gr-qc]

**93)** S. Vacaru, Super-luminal effects for Finsler branes as a way to preserve the paradigm of relativity theories, **Found. Physics 43** (2013) 719-732; arXiv: 1110.0675 [physics.gen-ph]

**92)** S. Vacaru, Diffusion and self-organized criticality in Ricci flow evolution of Einstein and Finsler spaces, **SYMMETRY: Culture and Science,** vol. **23**, nr. 2, (2013) 105-124; ISSN 0865-4824 (printed), ISSN 2226-1877 (online), Thematic Issue: Field theories on Finsler Space (Symmetries with Finsler metric, 2013); arXiv: 1010.2021 [math-ph]; http://symmetry.hu/content/aus_journal_content_abs_2012_23_2.html ; http://www.symmetry.hu/scs_online/SCS_23_2.pdf

## 2012

**91)** S. Vacaru, Principles of Einstein-Finsler gravity and perspectives in modern cosmology, **Int. J. Mod. Phys. D 21** (2012) 1250072 (40 pages)**;** arXiv: 1004.3007 [gr-qc]

**90)** S. Vacaru, Metric compatible or noncompatible Finsler-Ricci flows, **Int. J. Geom. Meth. Mod. Phys. 9** (2012) 1250041 (26 pages); arXiv: 1106.4888 [physics.gen-ph]

**89)** S. Vacaru, Modified dispersion relations in Horava-Lifshitz gravity and Finsler brane models, **Gener. Relat. Grav. 44** (2012) 1015-1042; arXiv: 1010.5457 [math-ph]

**88)** S. Vacaru, Fractional nonholonomic Ricci flows, **Chaos, Solitons & Fractals 45** (2012) 1266-1276; arXiv: 1004.0625 [math.DG]

**87)** S. Vacaru, Nonholonomic relativistic diffusion and exact solutions for stochastic Einstein spaces, **The European Physical Journal – Plus, 127** (2012) 32 (22 pages); ISNN 2190-5444 (electronic), Journal no. 13360; DOI 10.1140/epjp/i2012-12032-0; arXiv: 1010.0647 [math-ph]

**86)** S. Vacaru, Fractional dynamics from Einstein gravity, general solutions, and black holes, **Int. J. Theor. Physics 51** (2012) 1338-1359; arXiv: 1004.0628 [math-ph]

**85)** S. Vacaru, Nonholonomic algebroids, Finsler geometry, and Lagrange-Hamilton spaces, **Mathematical Sciences** (Springer Open) 2012, **6**: 18; DOI: 10.1186/2251-7456-6-18; http://www.iaumath.com/content/pdf/2251-7456-6-18.pdf ; arXiv: 0705.0032 [math-ph]; http://www.zentralblatt-math.org/zbmath/search/?q=an%3A1264.70039

**84)** D. Baleanu and S. Vacaru, Fractional analogous models in mechanics and gravity theories, in: **Fractional Dynamics and Control,** Part 3, editors: D. Baleanu, J. A. Tenreiro Machado and A. Luo (Springer, 2012), pages 199-207, ISBN 978-1-4614-0456-9; arXiv: 1008.0363 [math-ph]

**83)** D. Baleanu and S. Vacaru, Fractional exact solutions and solitons in gravity, in: **Fractional Dynamics and Control,** Part 3, editors: D. Baleanu, J. A. Tenreiro Machado and A. Luo (Springer, 2012), pages 229-236, ISBN 978-1-4614-0456-9; arXiv: 1008.0360 [math-ph]

**82)** S. Vacaru, Riemann-Finsler and Lagrange gerbes and the Atiyah-Singer theorems, **Bulletin of Transilvania University of** Brasov. Vol. 5 (54), no. 1 – 2012; Series III: Mathematics, Informatics, Physics (Romania, 2012) 97-128; arXiv: math-ph/0507068;
http://webbut.unitbv.ro/bulletin/Series%20III/BULETIN%20III%20PDF/vacaru%202012.pdf

## 2011
**81)** S. Vacaru, Covariant renormalizable anisotropic theories and off-diagonal Einstein-Yang-Mills-Higgs solutions, **Europhysics Letters (EPL) 96** (2011) 50001; arXiv: 1108.2023 [physics.gen-ph]

**80)** S. Vacaru, Finsler branes and quantum gravity phenomenology with Lorentz symmetry violations, **Class. Quant. Grav. 28** (2011) 215991; arXiv: 1008.4912 [hep-th]

**79)** S. Vacaru, On general solutions in Einstein gravity, **Int. J. Geom. Meth. Mod. Phys. 8** (2011) 9-21; arXiv: 0909.3949v1 [gr-qc] and 1106.4660 [physics.gen-ph]

**78)** S. Vacaru, Principles of Einstein-Finsler gravity and cosmology, **Journal of Physics: Conference Series 314** (2011) 012069; [*Proceedings of Spanish Relativity Meeting (ERE 2010): Gravity as a Crossroad in Physics*, Granada, Spain, September 6-10, 2010]; arXiv: 1012. 4148 [physics.gen-ph]

**77)** D. Baleanu and S. Vacaru, Constant curvature coefficients and exact solutions in fractional gravity and geometric mechanics, **Central European Journal of Physics 9** (2011) 1267-1279; arXiv: 1007.2864 [math-ph]

**76)** D. Baleanu and S. Vacaru, Fractional almost Kaehler-Lagrange geometry, **Nonlinear Dynamics 64** (2011) 365-373; arXiv: 1006.5535 [math-ph]

**75)** D. Baleanu and S. Vacaru, Fractional curve flows and solitonic hierarchies in gravity and geometric mechanics, **J. Math. Phys.** 52 (2011) 053514; arXiv: 1007.2866 [math-ph]

**74)** D. Baleanu and S. Vacaru, Fedosov quantization of fractional Lagrange spaces, **Int. J. Theor. Phys. 50** (2011) 233-243; arXiv: 1006.5538 [math-ph]

## 2010
**73)** S. Vacaru, New classes of off-diagonal cosmological solutions in Einstein gravity, **Int. J. Theor. Phys. 49** (2010) 2753-2776; arXiv: 1003.0043v1 [gr-qc]

**72)** S. Vacaru, Two-connection renormalization and nonholonomic gauge models of Einstein gravity, **Int. J. Geom. Meth. Mod. Phys. 7** (2010) 713-744; arXiv:0902.0961 [gr-qc]

**71)** M. Anastasiei and S. Vacaru, Nonholonomic black ring and solitonic solutions in Finsler and extra dimension gravity theories, **Int. J. Theor. Phys. 49** (2010) 1788-1804; arXiv: 0906.3811

**70)** S. Vacaru, Critical remarks on Finsler modifications of gravity and cosmology by Zhe Chang and Xin Li, **Phys. Lett. B 690** (2010) 224-228; arXiv: 1003.0044v2 [gr-qc]

**69)** S. Vacaru, Einstein gravity as a nonholonomic almost Kaehler geometry, Lagrange-Finsler variables, and deformation quantization, **J. Geom. Phys. 60** (2010) 1289-1305; arXiv: 0709.3609 [math-ph]

**68)** S. Vacaru, Finsler black holes induced by noncommutative anholonomic distributions in Einstein gravity, **Class. Quant. Grav. 27** (2010) 105003 (19pp); arXiv: 0907.4278 [math-ph]

**67)** S. Vacaru, On general solutions in Einstein and high dimensional gravity, **Int. J. Theor. Phys. 49** (2010) 884-913; arXiv: 0909.3949v4 [gr-qc]

**66)** S. Vacaru, Nonholonomic distributions and gauge models of Einstein gravity, **Int. J. Geom. Meth. Mod. Phys.  7** (2010) 215-246; arXiv: 0902.0911 [gr-qc]

**65)** S. Vacaru, Curve flows and solitonic hierarchies generated by Einstein metrics, **Acta Applicandae Mathematicae** [**ACAP**] **110** (2010) 73-107; arXiv: 0810.0707 [math-ph]

**2009**
**64)** S. Vacaru, Spectral functionals, nonholonomic Dirac operators, and noncommutative Ricci flows, **J. Math. Phys**.  50 (2009) 073503; arXiv: 0806.3814 [math-ph]

**63)** M. Anastasiei and S. Vacaru, Fedosov quantization of Lagrange-Finsler and Hamilton-Cartan spaces and Einstein gravity lifts on (co) tangent bundles, **J. Math. Phys.**  50 (2009) 013510 (23 pages);  arXiv: 0710.3079 [math-ph]

**62)** S. Vacaru, The entropy of Lagrange-Finsler spaces and Ricci flows, **Rep. Math. Phys. 63** (2009) 95-110; arXiv: math.DG/ 0701621

**61)** S. Anco and S. Vacaru, Curve flows in Lagrange-Finsler geometry, bi-Hamiltonian structures and solitons,  **J. Geom. Phys.  59** (2009) 79-103; arXiv: math-ph/0609070

**60)** S. Vacaru, Branes and quantization for an A-model complexification of Einstein gravity in almost Kaehler variables, Int. J. Geom. Meth. Mod. Phys. 6 (2009) 873-909; arXiv: 0810.4692

**59)** S. Vacaru, Loop quantum gravity in Ashtekar and Lagrange-Finsler variables and Fedosov quantization of general relativity **(The Icfai University Journal of Physics) The IUP Journal of Physics,** Vol. **II**, No. **4**. (2009) 15-58; arXiv: 0801.4942 [gr-qc];    http:// papers.ssrn.com/sol3/papers.cfm?abstract_id=1487523

**58)** S. Vacaru, Einstein gravity in almost Kaehler variables and stability of gravity with nonholonomic distributions and nonsymmetric metrics, **Int. J. Theor. Phys. 48** (2009) 1973-2000;  arXiv: 0806.3808 [gr-qc]

**57)** S. Vacaru, Nonholonomic Ricci flows, exact solutions in gravity, and symmetric and nonsymmetric metrics, **Int. J. Theor. Phys. 48** (2009) 579-606;  arXiv: 0806.3812 [gr-qc]

**56)**  S. Vacaru, Nonholonomic Ricci flows and parametric deformations of the solitonic pp-waves and Schwarzschild solutions, **Electronic Journal of Theoretical Physics (EJTP) 6, N21** (2009) 63-93; http://www.ejtp.com/articles/ejtpv6i21p63.pdf;  arXiv: 0705.0729 [math-ph]

**55)** S. Vacaru, Nonholonomic Ricci flows: exact solutions and gravity, **Electronic Journal of Theoretical Physics (EJTP) 6, N20,** (2009) 27—58;  http://www.ejtp.com/articles/ejtpv6i20p27.pdf ; arXiv: 0705.0728 [math-ph]

**2008**
**54)** S. Vacaru, Einstein gravity, Lagrange-Finsler geometry, and nonsymmetric metrics, **SIGMA**, **4** (2008) 071, 29 pages; arXiv: 0806.3810 [gr-qc]

**53)**  S. Vacaru, Nonholonomic Ricci flows: II. Evolution equations and dynamics, **J. Math. Phys.**  49 (2008) 043504 (27 pages); arXiv:  math.DG/0702598

**52)** S. Vacaru, Finsler and Lagrange geometries in Einstein and string gravity, **Int. J. Geom. Meth. Mod. Phys. 5** (2008) 473-511; arXiv: 0801.4958 [gr-qc]

**51)** S. Vacaru, Deformation quantization of nonholonomic almost Kaehler models and Einstein gravity, **Phys. Lett. A 372** (2008) 2949-2955; arXiv: 0707.1667 [gr-qc]

**50)** S. Vacaru and J. F. Gonzalez-Hernandez, Nonlinear connections on gerbes, Clifford-Finsler modules, and the index theorems, **Indian J. Math. 50** (2008) 573-606; arXiv: math.DG/ 0506437

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## D. Recent electronic preprints, lectures and communications, or papers published as parts of books:

### 2018
**21.** S. Vacaru, On axiomatic formulation of gravity and matter field theories with MDRs and Finsler-Lagrange-Hamilton geometry on (co) tangent Lorentz bundles, arXiv: 1801.06444 [physics.gen-ph]; (proposal for a monograph, under discussion)

### 2014
**20**. S. Vacaru, Non-Commutative Ricci Solitonic Hierarchies and Deformation Quantization, Proceeding of Conf.: 3 Quantum: Algebra, Geometry, Information, Tallinn University of Technology, Estonia; July 10-14, 2012; to long for: **J. Phys.: Conf. Ser. 544** (2014), 16 pages,

**19.** S. Vacaru, Almost Kahler—Ricci Solitons and Deformation Quantization, PAMQ, Dec 26, *2012* [short variant 8p of Belaw]

### 2012
**18.** S. Vacaru, Nonholonomic Clifford and Finsler Structures, Non-Commutative Ricci Flows, and Mathematical Relativity [habilitation thesis], arXiv: 1204.5387 [math-ph]

### 2007
**17.**  S. Vacaru, Finsler-Lagrange Geometries and Standard Theories in Physics: New Methods in Einstein and String Gravity, (a short variant was published in **Int. J. Geom. Methods. Mod. Phys. 5** (2008) 473-511, see arXiv: 0801.4958 [gr-qc]); arXiv: 0707.1524 [gr-qc]

**16.** S. Vacaru, Nonholonomic Ricci Flows: III. Curve Flows and Solitonic Hierarchies, arXiv:  0704.2062 [math.DG]

## 2006

**15.** S. Vacaru, Curve Flows and Solitonic Hierarchies Generated by (Semi) Riemannian Metrics, math-ph/0608024; an extended and revised variant published by **Acta Applicandae Mathematicae** [**ACAP**] (2010), see: arXiv: 0810.0707 [math-ph]

## 2005

**14.** S. Vacaru, Nonholonomic Deformations of Disk Solutions and Algebroid Symmetries in Einstein and Extra Dimension Gravity, gr-qc/0504095

**13.** S. Vacaru, Clifford Algebroids and Nonholonomic Spinor Deformations of Taub-NUT Spacetimes, hep-th/0502145

**12.** S. Vacaru, Einstein-Cartan Algebroids and Black Holes in Solitonic Backgrounds, gr-qc/ 0501057

## 2002

**11.** S. Vacaru and Nadejda Vicol, Nonlinear Connections and Clifford Structures, 80 pages; Presented as Poster at 6th International Conference on Clifford Algebras and their Applications, Cookeville, Tennessee, USA, May 18-25, 2002, Published in a short variant (50 pages): S. Vacaru and N. Vicol, Nonlinear Connections and Spinor Geometry, Int. J. Math. and Math. Sciences (IJMMS), 23 (2004) 1189-1237; math.DG/0205190
http://ijmms.hindawi.com/volume-2004/S0161171204212170.html

## 1999

**10.** S. Vacaru, Thermodynamic geometry and locally anisotropic black holes; text of a Lecture at the Math. Dep. Athens University, Greece, June 24, 2001, gr-qc/9905053

## 1998

**9.** S. Vacaru, Gauge Gravity and Conservation Laws in Higher Order Anisotropic Spaces; included in: Sergiu Vacaru: Interactions, Strings, and Isotopies in Higher Order Anisotropic Superspaces (Hadronic Press, Palm Harbor, USA, 1998) 260-283; hep-th/9810229

**8.** S. Vacaru, Miron's Generalization of Lagrange and Finsler Gravities: a Self-Consistent Approach to Locally Anisotropic Gravity; (text of a communication in honor of Radu Miron 70th birthday), physics/9801015

## 1996

**7.** S. Vacaru, Field Interactions and Strings in Higher Order Anisotropic Spaces; included in Sergiu Vacaru: Interactions, Strings, and Isotopies in Higher Order Anisotropic Superspaces (Hadronic Press, Palm Harbor, USA, 1998), pp. 201-314; hep-th/9611091

**6.** S. Vacaru, Spinors, Nonlinear Connections and Nearly Autoparallel Maps of Generalized Finsler Spaces (77 pages); extension of the paper in: P. Antonelli and R. Miron (eds.) "Lagrange and Finsler Geometry, Applications to Physics and Biology) (Kluwer, 1996), pp. 241-256; dg-ga/9609004;

**5.** S. Vacaru, Locally Anisotropic Interactions: III. Higher Order Anisotropic Supergravity; included in: Nucl. Phys. B 434 (1997) 619-624; hep-th/9607196

**4.** S. Vacaru, Nearly Autoparallel Maps, Tensor Integral and Conservation Laws in Locally Anisotropic Spaces, (38 p.) (Extension of "Romanian J. Phys" 39 (1994) 37-52); gr-qc/9604017

**3.** S. Vacaru, Nonlinear Connections in Superbundles and Locally Anisotropic Supergravity, (40 pag.); Published in: Sergiu Vacaru: Interactions, Strings, and Isotopies in Higher Order Anisotropic Superspaces (Hadronic Press, Palm Harbor, USA, 1998), pp. 60-88; gr-qc/9604016

**2.** S. Vacaru, Spinors in Higher Dimensional and Locally Anisotropic Spaces, an extension of the paper published in J. Math. Phys. 37 (1996) 508-523; gr-qc/9604015

**1.** S. Vacaru, Stochastic Processes and Diffusion on Spaces with Local Anisotropy (54 pages); there are given details of the calculus for: G. Tsagas (ed.) "Global Analysis, Differential Geometry and Lie Algebras" (Geometry Balkan Press, Thessaloniki, Bucharest, 1997), pp. 123-140; gr-qc/9604014

## E. Conferences, Seminars, Lectures, Visits etc.

### 2020
**161** S. Vacaru, invited lecture at Constantin Caratheordory's scientific work and its impact on Mathematics and Physics, Athens, May 29-30, 2020 (shifted because of covid19 pandemic)

### 2019
**160** S. Vacaru, with participation of E. V. Veliev, I. Bubuianu and L. Bubuianu, 30 min talk: Quantum Geometric Information Flows and (Modified) Gravity Theories, Workshop: Analytical and combinatorial aspects of quantum information theory, ICMS, Bayes Centre, 47 Potterrow, Edinburgh EH8 9BT, the UK, September 9-13, 2019, with partial support from organizers.

**159** S. Vacaru, participation at: Irish Quantum Foundations Meeting, Trinity College and DIAS, Dublin, May 24-25, 2019; https://maths.tcd.ie/~tristan/IQF2019/participants.html

**158** S. Vacaru, participation at: Hamilton School on Mathematical Physics, Trinity College, Dublin, May 21-23, 2019; https://www.maths.tcd.ie/~hiddingm/hmischool/#/participants

### 2017
**157** S. Vacaru, Quasiperiodic Structures in Modified Gravity and Cosmology Theories; 2d part of 1$^{st}$ Year Report, August 2016-May 2017 (1 st part for May – July 2016 was presented on Aug 11, 2016) Published papers and submitted preprints; Conferences, Visits and Seminars, Typical slides for a workshop on Finsler Geometry; May 16-17, 2017; QGR, Topanga, USA

**156** S. Vacaru (joint work and former collaborations with L. Bubuianu, and Douglas Singleton), Broken Scale Invariance, Gravity Mass, and Dark Energy in Two-measure Generalize Einstein-Finsler Gravity Theories with Modified Dispersion, Seminar, Math Dep, California State University at Fresno, California, the USA, May 15, 2017 [host D. Singleton, support from QGR]

**155** S. Vacaru (joint work with L. Bubuianu, K. Irwin and Olivia Vacaru), Exact black hole and cosmological solutions with modified dispersion on quasiperiodic structure in Finsler like theories on (co) tangent Lorentz bundles, IUCSS Workshop: Finsler Geometry and Lorentz Violation, Indiana University, Bloomington, USA; May 12-13, 2017 [organizer: prof. A. Kostelecky; support from organizers and QGR]

**154** S. Vacaru, Cosmology and quasiperiodic structures, Visit to Math Dep. University of Leeds, host: prof. A. Rucklidge, Jan 30, 2017 [financial support QGR]

### 2016
**153** S. Vacaru (joint work with K. Irwin, C. Castro-Perelman, R. Aschheim, F. Fang, M. Amaral, Amrik Sen, Arindom Saha), Quantum gravity and accelerating cosmology with aperiodic (non) commutative/ associative structures, (August 11, 2016, Topanga California), Half-term Report Seminar on the Consulting Agreement during May 23- Nov 4, 2016

**152** S. Vacaru (joint work with L. Bubuianu, T. Gheorghiu, S. Rajpoot, V. Ruchin and O. Vacaru), Geometric flows and Perelman's thermodynamics in modified (super) gravity theories; talk on July 12, 2016: Session A3, Alternative and Modified Theories of Gravity, Chair: Shinji Mukoyama; General Relativity and Gravity, GR21, Columbia University, NY, USA, July 10-15, 2016

**151** S. Vacaru (joint work with K. Irwin, L. Bubuianu and O. Vacaru), Interpretation of generic off-diagonal exact solutions in Einstein gravity and modifications; talk on July 14, 2016: Session A1, Exact solutions and their interpretation, Chair: Jiri Podolsky; General Relativity and Gravity, GR21, Columbia University, NY, USA, July 10-15, 2016

**2015**
**150** S. Vacaru, Cosmological Ricci Solitons Induced by Instanton and Monopole Configurations in Supersymmetric R2 and Modified Gravity Theories, Report Seminar and second half-term evaluation at Leibniz University Hannover, Institute of Theoretical Physics, DAAD fellowship for university/research professors, Stay II: November 14-Dcember 30, 2015; Munich, Germany [host prof. O. Lechtenfeld]

**149** S. Vacaru, Supergeometric Flows and Exact Solutions for Ricci Solitons and Modified Gravity Theories, Report Seminar and half-term evaluation at Max-Planck-Institut fuer Physic (Werner-Heisenberg-Institut), DAAD fellowship for university/research professors, Stay I: October 1 – November 14, 2015; Munich, Germany [host prof. D. Luest]

**148** Subhash Rajpoot and Sergiu I. Vacaru,Generic off-diagonal solutions and jet deformations in modified and/or higher dimension gravity theories; 15 minutes talk at parallel session ES3 – Exact Solutions (physical aspects), July 14, 2015, Fourteenth Marcel Grossman Meeting – MG14, 12-18 July 2015; Rome, Italy, http://www.icra.it/MG/MG14/ [with partial support from prof. S. Rajpoot, Organizers MG14 and request/expect support from the project IDEI]

**147** Subhash Rajpoot and Sergiu I. Vacaru, Geometric methods for constructing cosmological solutions for EYMH systems in two measure, f(R) and massive gravity theories; 15 minutes talk at parallel session AT1B – Extended Theories of Gravity and Quantum Cosmology, July 14, 2015, Fourteenth Marcel Grossman Meeting – MG14, 12-18 July 2015; Rome, Italy, http://www.icra.it/MG/MG14/ [with partial support from prof. S. Rajpoot, Organizers MG14 and request/expect support from the project IDEI]

**146** Maria Alexiou, Tamara Gheorghiu, Panayiotis Stavrinos, Olivia Vacaru and Sergiu Vacaru, Nonholonomic Ricci flows and Finsler-Lagrange f(R,F,L)-modified gravity and dark matter effects; 15 minutes talk at parallel session DM1 – Interacting Dark Matter, July 13, 2015; Fourteenth Marcel Grossman Meeting – MG14, 12-18 July 2015; Rome, Italy, http://www.icra.it/MG/MG14/ [with partial support from prof. S. Rajpoot, Organizers MG14 and request/expect support from the project IDEI]

**145** Tamara Gheorghiu, Olivia Vacaru and Sergiu I. Vacaru, Off-diagonal wormhole and black hole deformations and dark energy in two measure/ bi-metric modified gravity theories; 25 minutes talk at parallel session AT3 – Wormholes, Energy Conditions and Time Machines, July 13, 2015, Fourteenth Marcel Grossman Meeting – MG14, 12-18 July 2015; Rome, Italy, http://www.icra.it/MG/MG14/ [with partial support from prof. S. Rajpoot, Organizers MG14 and request/expect support from the project IDEI]

**144** Sergiu I. Vacaru, Locally anisotropic cosmological systems in modified two measure and massive gravity theories, 15 minutes talk at parallel session AT4 – Localized self-gravitating field systems in the Einstein and alternative theories of gravity, July 13, 2015; Fourteenth Marcel Grossman Meeting – MG14, 12-18 July 2015; Rome, Italy, http://www.icra.it/MG/MG14/ [with partial support from prof. S. Rajpoot, Organizers MG14 and request/expect support from the project IDEI]

**143** S. Vacaru, Geometric Methods for Constructing Exact Solutions in TMT and Bi-Metric Theories and Ricci Solitons; 12 January 2015, Particle and Fields Seminar, Physics Department, Faculty of Natural Sciences, Ben-Gurion University of the Negev, Be'er Sheva, Israel; [support from organizers and expected from Project IDEI]

**142** S. Vacaru, Participation at 32$^{nd}$ Winter School in Theoretical Physics "100 Years to General Relativity: From Theory to Experiment and Back", Dec 29, 2014 – Jan 8, 2015, Organizers D. Gross and E. Rabinovici, The Hebrew University of Jerusalem, Israel; [participation grant from organizers and support from Project IDEI]
 http://www.as.huji.ac.il/schools/phys32

**2014**

**141** S. Vacaru, Metode Geometrice in Gravitatie si Dinamica Nelineara, Prezentare publica, 25 min., Proiect IDEI, UEFISCDI, Bucuresti, 18 iunie, 2014 [in Romanian, support Proiect IDEI]

**140** S. Vacaru, Contributii la Cosmologia Matematica, Seminar stiintific. Institutul Astronomic. Academia Romana, 16 aprilie, 2014; Bucuresti [in Romanian, gazda prof. D. Suran; suport complet Proiect IDEI]

**139** S. Vacaru, Metode geometrice de solutionare ale ecuatiilor modificate Einstein si aplicatii in cosmologia moderna, Expunere la Departamentul de Matematica si Informatica. Universitatea Babes Bolyai, Cluj-Napoca, 15 aprilie, 2014 [in Romanian, gazda prof. O. Agratini, suport complet Proiect IDEI]

**138** S. Vacaru, Nonholonomic Geometric and Deformation Quantization in Geometric Mechanics and Gravity Theories; 75 min invited lecture at Workshop on Algebra and Discrete Mathematics; Institute of Mathematics; Faculty of Mechanical Engineering; Brno University of Technology, April 2-5, 2014 [host prof. M. Kures; bulk support from hosts and some travel support from IDEI]

**137** S. Vacaru, Geometric Methods for Constructing Generic Off-Diagonal Exact Solutions in Gravity; talk at Relativity Seminar of the Department of Theoretical Physics, Institute of Theoretical Physics, Faculty of Mathematics and Physics, Charles University, Prague; April 1, 2014 [host prof. O. Semerak; accommodations from host and partial support from grant IDEI]

**136** S. Vacaru, Generalized Berezin quantization of almost Kaehler-Cartan geometry and nonolonomic Ricci solitons and Einstein spaces; Seminar "Geometry & Physics, NIPNE-HH, DFT, Bucharest-Magurele, Romania, March 21, 2014 [host dr. C. Lazaroiu; full support from grant IDEI]

**135** S. Vacaru, Geometric & Quantum Methods in Gravity and Particle Physics; Off-diagonal deformations of Kerr black holes in Einstein and modified massive gravity; with a brief summary of scientific activity; Seminar at NIPNE, DFT, Bucharest-Magurele, Romania, March 20, 2014 [host prof. A. Isar; full support from grant IDEI]

## 2013
**134** S. Vacaru, A month visit at TH- CERN (during 14 Oct – 12 Nov 2013) with associated 12 months visiting researcher status beginning Oct 14, 2013

**133** S. Vacaru, Noncommutative Lagrange-Finsler evolution and modern gravity, 25 min talk on 13 Oct 2013, at DGDS-2013, The International Conference of "Differential Geometry and Dynamical Systems", University Politehnica of Bucharest, October 10-13, 2013

**132** S. Vacaru, Off-Diagonal Wormhole Deformations in Modified Massive Gravity, Oral communication, Parallel session – A1 – Exact solutions and their interpretation, July 08. 2013. Conference GR 20 & Amaldi 10, Warsaw University, Poland, July 7-13, 2013 [support from organizers, excepting travel]

**131** S. Vacaru, Twistors and Almost Kaehler Models of Einstein and Finsler Spaces, Parallel session – A4 – Complex and conformal methods in classical and quantum gravity, July 09. 2013. Conference GR 20 & Amaldi 10, Warsaw University, Poland, July 7-13, 2013 [support from organizers, excepting travel]

**130** S. Vacaru, A Survey of the Anholonomic Frame Deformation Method of Constructing Exact Solutions, - Poster - Parallel session – A2 – Mathematical relativity and other progress in classical gravity theory, GR20 & Amaldi 10, Warsaw University, Poland, July 7-13, 2013 [support from organizers, excepting travel]

**129** S. Vacaru, Off-Diagonal Deforms of Kerr Black Holes in Modified Massive Gravity and Higher Dimension, - Poster – Parallel session – A3 – Modified gravity theories, GR20 & Amaldi 10, Warsaw University, Poland, July 7-13, 2013 [support from organizers, excepting travel]

**128** S. Vacaru, Off-Diagonal Ekpyrotic Cosmological Solutions in Massive Gravity and Effective Einstein Spaces, Poster, Parallel session –B6 – Theoretical / mathematical cosmology GR20 & Amaldi 10, Warsaw University, Poland, July 7-13, 2013 [support from organizers, excepting travel]

**127** S. Vacaru, Spectral Functional for Noncommutative Almost Kaehler Ricci Flows and Lorentzian Star Products, 30 min. talk on 30 June, section Operator Algebra and Noncommutative Geometry, Joint International Meeting AMS – RMS, Alba Iulia, June 27-30, 2013  [expected support from 55% of grant IDEI in 2014 but for 2013]

**126** S. Vacaru, Solitonic Hierarchies for Almost Kaehler Ricci Flows and Off-Diagonal Solutions in Gravity, 30 min. talk on 27 June, section Nonlinear Evolution Equations, Joint International Meeting AMS – RMS, Alba Iulia, June 27-30, 2013 [expected support from 55% of grant IDEI in 2014 but for 2013]

**125** S. Vacaru, Almost Kaehler Ricci Flows and Einstein and Lagrange-Finsler Structures on Lie Algebroids; invited lecture at 11$^{th}$ Panhellenic Geometric Conference, National and Kapodistrian University of Athens, May 31- June 2, 2013 [full support from organizers]

**124** S. Vacaru, Non-commutative Algebroid Ricci Flows, Modified Gravity and Deformation Quantization, Seminar at Department TH P, NIPNE, Bucuresti, Magurele, Romania, May 30, 2013 [expected support from 55% of grant IDEI in 2014 but for 2013]

**123** S. Vacaru, 1 day visit to Bucharest, Magurele, IFIN HH, DTF – discussion further seminar and collaborations, hosts prof. A. Isar and M. Visinescu, April 29-May 1 [expected support from 55% of grant IDEI in 2014 but for 2013]

<u>**2012**</u>
**122** S. Vacaru, QCD and Modified Gravity, Seminar and Short Visit, November 26-29, 2012; Physics Department, Kocaeli University, Izmit, Turkey [45 minutes lecture for students and non-experts; support from host and grant IDEI]

**121** S. Vacaru, Questions and Problems on Methodology an Habilitation on Mathematical Physics, Conference: Diaspora in Cercetarea Stiintifica si Invatamantul Superior din Romania, Bucuresti, 25-28 septembries 2012; Workshop 6. Fizica la marile colaborari internationale, 27 septembrie, 2012 [20 minits]

**120** S. Vacaru, Dirac Operators and (Non) Commutative Finsler Ricci Flows and Mathematical Relativity, oral communication at commission for a CS1 position (the Romanian equivalent for research professor), Department of Science, Alexandru Ioan Cuza University, UAIC, Iasi, Romania, September 17, 2012

**119** S. Vacaru, Wormhole Off-Diagonal Solutions in f(R,T), Einstein and Finsler Gravity Theories, Oral Communication (September 6), Section IV-B, ERE 2012; Spanish Relativity Meeting in Portugal, Universidade do Minho, Portugal, Guimaraes, September 3-7, 2012 [support Project IDEI]

**118** S. Vacaru, Perspective si probleme in realizarea Proiectului IDEI la UAIC, in 2012, si ulterior. Sedinta de Seminarii, Departament Stiinte, UAIC, 20 iulie 2012.

**117** S. Vacaru, (Non) Commutative Ricci Solitonic Hierarchies and Deformation Quantization, Oral Communication (July 12), Section Deformation Theory and Quantization; conference: 3 Quantum: Algebra, Geometry, Information, Tallinn University of Technology, Estonia; July 10-14, 2012 [support Project IDEI]

**116** S. Vacaru, Generic Off-Diagonal Solutions and Solitonic Hierarchies in Einstein and Modified Gravity, Oral Communication (July 6), Parallel Section GT1 – Exact Solutions in Four and Higher Dimensions: Mathematical Aspects; Thirteen Marcel Grossmann Meeting – MG13, Stockholm University, Sweden; July 1-7, 2012 [support for travel from Organizers and accommodations/fee Project IDEI]

**115** S. Vacaru, Cosmological Solutions in Biconnection and Bimetric Gravity Theories, Oral Communication (July 5), Parallel Section AT4a – Modified Gravity; Thirteen Marcel Grossmann Meeting – MG13, Stockholm University, Sweden; July 1-7, 2012 [support for travel from Organizers and accommodations/fee Project IDEI]

**114** S. Vacaru, Covariant Renormalizable Gravity Theories on (Non) Commutative Tangent Bundles, Oral Communication (July 3), Parallel Section QG2b – Quantum Gravity Phenomenology; Thirteen Marcel Grossmann Meeting – MG13, Stockholm University, Sweden; July 1-7, 2012 [support for travel from Organizers and accommodations/fee Project IDEI]

**113** S. Vacaru, Noncommutative almost Kaehler – Ricci solitons and deformation quantization, talk at XXXI Workshop on Geometric Methods in Physics, Białowieza, Poland, June 24-30, 2012 [support Project IDEI]

**112** S. Vacaru, Decoupling of Field Equations in Einstein and Modified Gravity, talk at Session B, on June 22, 2012; Conference "Recent Developments in Gravity - NEB15", June 20 - 23, 2012, Chania, Crete, GREECE, Hellenic Society on Relativity, Gravitation and Cosmology, [support from prof. E. Vagenas, organizer (fee), and Project IDEI]

**111** S. Vacaru, Finsler Methods and Exact Solutions in Einstein and Modified Gravity, Survey   Lecture at Department of Mathematics, University of Athens, on June 15, 2012, with a research/ seminar visit during 13 - 18 June, 2012, Greece [host Prof. P. Stavrinos, with support for accommodations, and travel/ per-diem from Project IDEI]

**2011**
**110** S. Vacaru, Fractional Stochastic Ricci flows and solitons, invited seminar (with partial support by hosts and project IDEI), INFN, Dep. Physics, Bologna, Italy December 12, 2011 [host Prof. F. Mainardi]

**109** S. Vacaru, Ricci Solitons and Off-Diagonal Solutions in Einstein and Modified Gravity, invited seminar (with partial support by hosts and project IDEI), Faculty of Science and Technology, University of Stavanger, Norway, December 2, 2011 [host Prof. S. Hervik]

**108** S. Vacaru, Decoupling, Integrability and Quantization of Einstein and Finsler Gravity Theories, invited seminar (with partial support by hosts and project Idei) at King's College of London, Department of Physics,  November 30, 2011 [host Prof. N. Mavromatos]

**107** S. Vacaru, Decoupling of Gravitational Field Equations, Off-Diagonal Solutions and Solitonic Hierarchies, invited seminar (with partial support by hosts and project Idei) at University College of London - UCL, Department of Mathematics, November 28, 2011 [hosts Prof. D. Vassiliev and C. Boemer]

**106** S. Vacaru, Decoupling and Exact Solutions of Einstein Equations and Covariant Renormalizable Gravity Theories, Review Lecture and Selected Results, Institut de Ciencies de l'Espai - ICE,  Barcelona, September 13, 2011 [complete support from hosts: Prof. S. D. Odintsov and E. Elizalde]

**105** S. Vacaru, Decoupling and Exact Solutions of Einstein Equations and Quantum Gravity, Review Lecture and Recent Results, IFT and Universidad Autonoma de Madrid - UAM,   Facultad de CIENCIAS, Departamento de Fisica Teorica, September 12, 2011 [complete support from hosts: Prof. Dr. E. Alvarez and Dr. R. Vidal]

**104** S. Vacaru, Decoupling and Exact Solutions of Einstein Equations in Almost Kaehler Variables, Poster Session at VI International Meeting on Lorentzian Geometry, Granada, Spain, September 6-9, 2011 [complete support from organizers]

**103** S. Vacaru, Geometric Flows of Lagrange and Hamilton Geometries and Deformation Quantization, Research Seminar at Instituto de Ciencias Matematicas, Madrid, Spain, [complete support from host Acad. Prof. Dr. M. de Leon, September 5, 2011]

**102** S. Vacaru, Finsler Geometry Methods and Generalizations of Classical and Quantum Gravity, Review Lecture at the VII-th International Conference Finsler Extensions of Relativity Theory - FERT 2011, 29 Aug - 4 Sep 2011, Brasov – Romania, September 2, 2011 [partial support from UAIC and Organizers]

**101** S. Vacaru, Noncommutative Black Ellipsoids and Rings and Nonholonomic Ricci Flows, Invited Research Seminar at Jacobs University, held at ZARM Bremen University, Germany, February 22, 2011 [complete support from host Prof. Dr. P. Schupp]

**100** S. Vacaru, Principles of Relativity in Einstein and Finsler Gravity and Exact Solutions, Invited Review Lecture at Zarm, University Bremen, Germany, February 22, 2011 [complete support from hosts Prof. Dr. C. Laemmerzahl and Dr. V. Perlick]

## **2010**
99  S. Vacaru, Almost Kaehler – Ricci Flows and Deformation Quantization of Gravity, (review lecture, Nov 16, 2010, at Mathematics Research Unit, Universite du Luxembourg, Nov 15-17, 2010) [complete support from host: prof. M. Schlichenmaier]

98 S. Vacaru, On Geometric Methods of Generating Exact Solutions in Gravity (research seminar), Universite de Mons, Physique Theorique et Math., Belgium, November 12, 2010 [short visit, Nov 6-14, complete support from host: prof. Yves Brihaye]

97 S. Vacaru, Noncommutative Ricci Flows and Exact Solutions in Gravity, (review lecture, Nov 5, 2010, at Universitat Wien, Mathematical Physics & short visit at E. Schroedinger Institute, Nov 3-5, 2010) [complete support from host: prof. H. Grosse]

96 S. Vacaru, Finsler-Ricci Flows and Exact Solutions in Gravity, (research seminar), Universitat Leipzig, Mathematisches Institut, Germany, November 2, 2010 [short visit Nov 1-2, complete support from host: prof. H. Rademacher]

95  S. Vacaru, Modified Dispersion Relations in Horava-Lifshitz Gravity and Finsler Grane Models, Seminar at Max-Planck-Institut für Gravitationsphysik, Albert-Einstein-Institut, Potsdam-Golm, Germany, October 29, 2010 (visit Oct 16-31, 2010), complete support from AEI, http://seminput.aei.mpg.de/more_info.php?which=3346&talk=index

94 S. Vacaru, Diffusion and Self-Organized Criticality in Ricci Flow Evolution of Einstein and Finsler Spaces, Research Seminar at: Institute of Mathematics "O. Mayer", Romanian Academy, Iasi Branch, October 11, 2010

93 S. Vacaru, Diffusion Processes on Nonholonomic Manifolds and Stochastic Solutions for Einstein Spaces, Multidisciplinary Research Seminar at: Institute of Mathematics "O. Mayer", Romanian Academy, Iasi Branch, October 4, 2010

92 S. Vacaru, Principles of Einstein-Finsler Gravity, Review Lecture at Department of Mathematics, Faculty of Sciences, University of Granada, Spain, September 9, 2010 (complete support from host Prof. M. Sanchez Caja)

91 S. Vacaru, Principles of Einstein-Finsler Gravity and Perspectives in Modern Cosmology, talk on September 8, 2010 at: ERE2010, Spanish Relativity Meeting, September 6-10, 2010, Granada, Spain [complete support from organizers]

90 D. Baleanu and S. Vacaru, Fractional Analogous Models in Mechanics and Gravity Theories, Communication on July 29, 2010, at 3rd Conference on Nonlinear Science and Complexity; 28-31 July; Cankaya University, Ankara, Turkey; http://nsc10.cankaya.edu.tr/program.php  [complete support from organizers]

89 D. Baleanu and S. Vacaru, Fractional exact solutions and solitons in gravity, Communication on July 26, 2010, at Conference "New Trends in Nanotechnology and Nonlinear Dynamical Systems", July 25-27, 2010; Cankaya University, Ankara, Turkey; http://nnds10.cankaya.edu.tr/ [complete support from organizers]

88 S. Vacaru, On General Solutions in Topological Massive Gravity and Ricci Flows, Seminar at Department of Mathematics, Bilkent Univiersity, July 22, 2010, Ankara, Turkey (complete support from host: Metin Gurses)

87 S. Vacaru, Perelman's Functionals for Nonholonomic Cotton Flows and Exact Solutions in Massive Gravity, Seminar at Department of Physics, Middle East Technical University, July 21, 2010, Ankara, Turkey (complete support from host: Bayram Tekin)

86 S. Vacaru, Lagrange-Finsler Spaces, Noncommutative Ricci Flows and Deformation Quantization, Seminar at Department of Mathematics, Yeditepe University, July 20, 2010, Istanbul, Turkey (complete support from host: Ilhan Ikeda)

85 S. Vacaru, (Non) Commutative Black Ellipsoids and Rings as Supergravity Solutions for S-Branes, Seminar at Department of Physics, Bogazici University, July 19, 2010, Istanbul, Turkey (complete support from host: Ali Kaya)

84 S. Vacaru, Noncommutative Ricci Flows and Applications in Modern Gravity and Geometric Mechanics, Invited lecture at: Noncommutative Geometry Workshop, Noncommutative Geometry Days in Istanbul, June 25-27, 2010, Istanbul Center for Mathematical Sciences (IMBM) and Bahcesehir University, Organizers: Muge Kanumi and Atabey Kaygun [complete support from organizers]. http://web.bahcesehir.edu.tr/atabey_kaygun/workshop.html
http://web.bahcesehir.edu.tr/atabey_kaygun/ncg-workshop.pdf

83 M. Anastasiei and S. Vacaru, General Solutions in Einstein Gravity and (Non)-Commutative Finsler-Lagrange Modifications, Invited lecture at: National Conference on Theoretical Physics, NCTP2010 –fourth edition, June 23-25, 2010, "Alexandru Ioan Cuza" University of Iasi, Romania, http://stoner.phys.uaic.ro/NCTP2010.html

82 S. Vacaru, (Non) Commutative Ricci Flows of Fedosov-Finsler Spaces and Quantum Gravity, talk at: Workshop on Algebraic Geometry and Physics (WAGP 2010) June 7-11, 2010; Saint Jean de Monts, France [partial support from organizers and UAIC]; http://people.sissa.it/~bruzzo/wagp2010/index.htm

## 2009
81 S. Vacaru, Ricci Flows and (Non) Commutative Einstein-Finsler Spaces, Communication at: Seminarul Informal de Noutati Geometrice (SING) November 24, 2009; http://www.math.uaic.ro/~litcanu/091124uaic_transp.pdf

80 S. Vacaru, Anholonomic Deformations in Einstein and Lagrange-Finsler Gravity and Ricci Flow Theories, Communication at: Seminarul Informal de Noutati Geometrice (SING) November 17, 2009;
http://www.math.uaic.ro/~litcanu/transp_Vacaru.pdf

## 2008
79 Participation at: Noncommutative Geometry Workshop, Fields Institute, May 27-31, 2008,
http://www.fields.utoronto.ca/programs/scientific/07-08/noncommutative/[partial organizers sup]

78 Short Term Visit and Seminar "Loop Quantum Gravity and Deformation Quantization" at Perimeter Institute, February 7, complete support from host: Prof. J. Moffat, February 6-8, 2008,
http://www.perimeterinstitute.ca/index.php?option=com_content&task=view&id=50&Itemid=83&lecture_id=6445   ;
http://pirsa.org/index.php?p=speaker&name=Sergiu_Vacaru
http://streamer.perimeterinstitute.ca/Flash/036b0512-12bf-41dd-843b-3730734ea042/viewer.html
http://www.perimeterinstitute.ca/search/node/Vacaru%20Sergiu
http://www.perimeterinstitute.ca/videos/loop-quantum-gravity-and-deformation-quantization

77 Participation at January 14-17, 2008, Conference on Mathematical Physics and Geometric Analysis at the Fields Institute, Toronto,  [partial support from organizers]
http://www.fields.utoronto.ca/programs/scientific/07-08/geomanalysis/
http://streamer.perimeterinstitute.ca/Flash/036b0512-12bf-41dd-843b-3730734ea042/viewer.html

## 2007
**76** S. Vacaru, Nonholonomic Ricci Flow, Nonsymmetric Gravity and Stability, Visit at Perimeter Institute, complete support from host: prof. J. Moffat, November 1-3, 2007,
http://www.perimeterinstitute.ca/index.php?option=com_content&task=view&id=30&Itemid=72&pi=Sergiu_Vacaru

75 S. Vacaru, The Entropy of Lagrange-Ricci Flows, contribution to CANCAM 2007 Conference. page 19, Session FMLF2: http://www.ryerson.ca/cancam07/PrelimProgram.pdf

74 S. Vacaru, Curve Flows, Riemann-Finsler Solitonic Hierarchies and Applications, Talk at Fields Institute Colloquium/Seminar in Applied Mathematics, April 11, 2007,
http://www.fields.utoronto.ca/programs/scientific/06-07/applied_math/

## 2006
**73** S. Vacaru, Anholonomic Frames Exact Solutions with Generalized Symmetries in Gravity, Seminars on January 18 and 25, 2006, at Mathematical Department, Brock University, St Catharines, Ontario, Canada, http://www.brocku.ca/mathematics/seminars/research.php

## 2005
**72** S. Vacaru, Exact Solutions and Generalized Lie Symmetries in Gravity, Seminars on "Relativity and Cosmology" supervised by P. Gonzales at IMAFF CSIC, Madrid, October 14, 2005, http://www.imaff.csic.es/pcc/seminarios.htm

**71** S. Vacaru, Noncommutative Clifford Algebroids and Riemann-Lagrange Geometry, Oral communication accepted at International Conference on Clifford Algebras and their Applications, ICCA 7, Toulouse, May 19-29, 2005, http://www.icca7.ups-tlse.fr/communic.html

## 2004
**70** S. Vacaru, Lagrange-Fedosov Geometry, Communication at the Dep. Mathematics, University of Cantabria, Santander, Spain, June 21-28, 2004 (host, F. Etayo)

**69** S. Vacaru, Cosmological Solutions in Brane Gravity with Quantum Group Symmetry, Lecture at "Consejeria de Educacion de la Junta de Andalucia" and the "Grupo de Estructura de la Materia", and the of the University of Huelva, host M. E. Gomez, supported by "Consejeria de Educacion de la Junta de Andalucia", June 17, 2004

**68** S. Vacaru, A Survey of (Non) Commutative Lagrange and Finsler Geometry, Lecture 2: Noncommutative Lagrange—Finsler Geometry. P. Almeida Seminar, Inst. Sup. Tecnico, Dep. Math., Lisboa, Portugal, May 19, 2004

**67** S. Vacaru, A Survey of (Non) Commutative Lagrange and Finsler Geometry, Lecture 1: Commutative Lagrange—Finsler Spaces and Spinors, P. Almeida Seminar, Inst. Sup. Tecnico, Dep. Math., Lisboa, Portugal, May 19, 2004

**66** S. Vacaru, Geometric Models in Mechanics and Field Theory, Invited lecture at the Dep. Mathematics, University of Cantabria, Santander, Spain, March 16, 2004 (host, F. Etayo)

**65** S. Vacaru, Noncommutative Symmetries Associated to the Lagrange and Hamilton Geometry, Invited lecture at the Instituto de Matematicas y Fisica Fundamental, Consejo Superior de Investigationes, Ministerio de Ciencia y Tecnologia, Madrid, Spain, March 10, 2004 (host, M. de Leon)

**64** S. Vacaru, Commutative and Noncommutative Gauge Models, Invited lecture at the Department of Experimental Sciences, University of Huelva, Spain, March 5, 2004 (host, M. Gomez)

## 2003
**63** S. Vacaru, Anholonomic Frame Transforms and Exact Solutions in String Gravity, Invited lecture at the Dep. Fisica, University of Salamanca, Spain, November 25, 2003 (host M. Mars).

**62** S. Vacaru, (Non) Commutative Finsler Geometry from String/M—theory, Section "String and M-Theory", Poster at XIV Int. Congress Math. Phys. 2003, Lisbon

**61** S. Vacaru, Horizons, Geodesics and Stability of Black Ellipsoids, Section "General Relativity", Poster at XIV Int. Congress Math. Phys. 2003, Lisbon

**60** S. Vacaru, Noncommutative Gauge Gravity and Finsler Geometry in String Theory, Abstract of accepted communications for the 10th Marcel Grossmann Meeting on General Relativity,
Rio de Janeiro, Brazil, July 16-18, 2003,  http://www.cbpf.br/mg10/parallel/s2.html

**59** S. Vacaru, (Non) Commutative Finsler Geometry, Gauge Gravity and Strings, String Theory Seminar, IST, Lisbon, Portugal March 21, 2003, http://www.math.ist.utl.pt/~strings/strings2.html

**58** S. Vacaru, Noncommutative Finsler Geometry, Gauge Fields and Gravity, Invited seminar at the Dep. Theoretical Physics, University of Zaragoza, Spain, November 19, 2003 (host L. Boya)

**57** S. Vacaru, Nonlinear Connection Geometry and Exact Solutions in Einstein and Extra Dimension Gravity, Communication. Abstract at **Geometría de Lorentz** http://www.um.es/gelomur/  **Murcia, Spain, November 12-14, 2003**

**56** S. Vacaru, Nonlinear Connection Geometry and Exact Solutions in String Gravity, Abstract at The XIIth Oporto Meeting on Geometry, Topology and Physics, in Oporto, Portugal, July 17th to 20th, 2003, with the main topic "*MATHEMATICS & STRING THEORY*", Satelite of the XIV International Congress on Mathematical Physics, Lisbon, July 28th to August 2, 2003

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**55** S. Vacaru, Dirac Spinor Waves and Solitons in Anisotropic Taub-NUT Spaces, Abstract 1.57 at International Conference on Theoretical Physics Paris, UNESCO, 22-27 July 2002

**54** S. Vacaru, Anholonomic Soliton-Dilaton and Black Ellipsoid-Torus Solutions, Abstract 3.50 at International Conference on Theoretical Physics Paris, UNESCO, 22-27 July 2002

**53** S. Vacaru, Locally Anisotropic Kinetic Processes and Thermodynamics in Curved Spaces, Abstract 4.132 at International Conference on Theoretical Physics, Paris, UNESCO, 22-27 July 2002

**52** S. Vacaru, Ellipsoidal, Toroidal and Solitonic Wormholes in 5D Gravity, Abstract 10.49 at International Conference on Theoretical Physics, Paris, UNESCO, 22-27 July 2002

**51** S. Vacaru, Clifford Structures and Noncommutative Finsler Geometry in Sting Theory, Abstract 11.38 at International Conference on Theoretical Physics, Paris,UNESCO,22-27 July 2002

**50** S. Vacaru, Noncommutative Finsler Geometry and Physics, Abstract of Poster Session, Abstract & Programs of ICCA 6th International Conference on Clifford Algebras & their Applications, Cookeville, Tennessee, USA,May,18-25, 2002,p.84,ed.R. Ablamowicz and J. Ryan

**49** S. Vacaru, Anisotropic Spinor-Dirac Waves in 5D Gravity, Abstract of Poster Session, Abstract and Programs of ICCA 6th International Conference on Clifford Algebras and their Applications, Cookeville, Tennessee, USA,May,18-25,2002,p.85, ed.R. Ablamowicz and J. Ryan

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**47** S. Vacaru and Nadejda Vicol, Nonlinear Connections and Dual Clifford Structures,  Abstract of Poster Session, Abstract and Programs of ICCA 6th International Conference on Clifford Algebras and their Applications, Cookeville, Tennessee, USA, May 18-25, 2002, p. 84, ed. R. Ablamowicz and J. Ryan

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**44** P. Stavrinos, S. Vacaru, E. Gaburov and D. Gontsa, Anholonomic Frames and Nonlinear Connections in General Relativity, Communication at the Internatonal Conference on "Finsler, Lagrange and Hamilton Spaces", Al. I. Cuza University, Iasi, Romania, 26-31 August, 2001

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**40** G. Tsagas and S. Vacaru, Nonlinear Connections and Clifford Isotopic Structures. Contribution to the Conference on Applied Differential Geometry – General Relativity, Aristotle University of Thessaloniki, School of Technology, Mathematics Division, Thessaloniki, Greece, June 27-July 1, 2001, Editor Prof. Gr. Tsagas

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**28** S. Vacaru and S. Ostaf, Locally Anisotropic Spinors and Twistors, *Contributions to 14 th International  Conference on General Relativity and Gravitation, Florence,* August  6-12, 1995  (GR14, Florence, 1995)

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**23** S. Vacaru and S. Ostaf, Twistors and Nearly Autoparallel Maps, in: *Contributions to the Coloquium on Differential  Geometry, 25-30 July, 1994 (*Lajos Kossuth University, Debrecen, Hungary, 1994), p. 56

**22**   I. Gottlieb and S. Vacaru, A. Moor's Integral and Nearly Autoparallel Maps, in:  *Abstracts of Contributions to the  Colloquium on Differential Geometry, 25-30 July, 1994* (Lajos Kossuth University, Debrecen, Hungary,   1994), p. 19

**21**    S. Ostaf and S. Vacaru, Nearly Autoparallel Maps of Generalized Lagrange Superspaces, in:  *Abstracts of the  Romanian National Conference on Physics,* 22-25   September, 1994 (Sibiu, Romania, 1994)

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**16** S. Vacaru,  Spinors and Twistors in Super-Lagrange Spaces, in: Contributions to the  XIX Annual Congress  of the American Romanian   Academy of Arts and Sciences,  Smith College, 3-6 November, 1994  (Mathachussets, 1994)

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**9** Dorina Stancu and S. Vacaru, General Relativity on Nearly Geodesic Backgrounds, in: *Abstracts of Contributed Papers to the 13th International Conference on General Relativity and Gravitation,* Eds. Pedro W. Lamberty and Omar E. Ortiz (Cordoba, Argentina, 1992) p. 220

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