

PERSONAL INFORMATION

Nicoleta VOICU


 Transilvania University of Brasov, Romania
 Department of Mathematics and Computer Science



 nico.voicu@unitbv.ro

ResearchGate: <https://www.researchgate.net/profile/Nicoleta-Voicu>

Sex F | Date of birth | Nationality Romanian

WORK EXPERIENCE

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| 2014 - | Associate Professor
Dept. of Mathematics and Computer Science, Transilvania University of Brasov, Romania |
| 2010-2013 | Post-doctoral research fellow
Dept. of Mathematics and Computer Science, Transilvania University of Brasov, Romania |
| 2003-2014 | Assistant Professor
Dept. of Mathematics and Computer Science, Transilvania University of Brasov, Romania |
| 2000-2003 | Teaching Assistant
Dept. of Mathematics and Computer Science, Transilvania University of Brasov, Romania |
| 1998-2000 | Junior Teaching Assistant
Dept. of Mathematics and Computer Science, Transilvania University of Brasov, Romania |

EDUCATION AND TRAINING

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| 1998-2003 | PhD in Mathematics, Babes-Bolyai University, Cluj-Napoca, Romania |
| 1997-1998 | Master's degree in Mathematical Modeling and Software products,
Transilvania University of Brasov, Romania (graduated with 10/10) |
| 1993-1997 | Bachelor's degree in Mathematics
Transilvania University of Brasov, Romania (graduated with 10/10) |

PERSONAL SKILLS

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| Research topics and interests | I am a mathematician with an experience and interest in collaboration with theoretical physicists.
Research topics: <ul style="list-style-type: none"> ▪ Differential geometry , calculus of variations on manifolds ▪ Extended gravity theories |
| Mother tongue(s) | Romanian |

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
French	C2	C2	C2	C2	C2

- Communication skills**
- good communication skills acquired during a more than 20-year teaching activity and during scientific team work
 - team spirit, positive and proactive attitude, experience with international collaborations

- Organisational / managerial skills**
- Experience in organizing scientific events (see *detailed list below*).
 - Member of the Management Committee of two e-COST Actions (CA15117 and CA18108).

- Computer skills**
- Mathematical software (Maple), scientific text editing

- Driving licence**
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ADDITIONAL INFORMATION

Publications

(A selected list of publications is presented in the end of the document)

- 6 scientific books and book chapters
- 45 papers published or under review in peer-reviewed journals
- Guest Editor of a special issue of the International Journal of Geometric Methods in Modern Physics (Vol 16 supp. 02, 2019).

Invited talks (2015-2020)

- November 25, 2020 (*to be delivered, online*), *Variational completion of differential equations and modified theories of gravity*, Center of Applied Space Technology and Microgravity, University of Bremen, Germany.
- March 2020, *Mathematical foundations for a Finsler extension of Einstein gravity*, University of Murcia, Spain, Faculty of Mathematics.
- February 2020, *Variational completion of differential equations*, Institute of Physics, University of Tartu, Estonia.
- January 2020, *Mathematical foundations for a Finsler extension of Einstein gravity*, 1st Dutch Mathematical Relativity Day, Radboud University, Nijmegen, the Netherlands.
- October 2019: *The why and how of Finsler field theory*, 4th COST CA15117 CANTATA Meeting, Tuzla, Bosnia-Herzegovina.
- January 2019: *Variational problems in Finsler spacetimes*, Meeting on Lorentz-Finsler Geometry and Applications, University of Granada, Spain.
- August 2018: *Finsler and pseudo-Finsler geometry - a fresh look at a century-old problem*, lecture at the 23rd International Summer School on Global Analysis and its Applications, Brasov, Romania.
- June 2018, *A geometric setting for Finslerian field theory*, 3rd IUCSS Summer School on the Lorentz- and CPT-Violating Standard-Model Extension (SME 2018), Indiana University, Bloomington, USA.
- June 2016: *Volume forms in Finsler spacetimes*, invited talk at the 2016 Conference on Riemann-Finsler Geometry, Nankai University, Tianjin, China.
- April 2016 - *Finslerian spacetime geometry - a brief review*, University of Hradec Kralove, Czech Republic.
- January 2016 - *An introduction to Finsler-Lagrange geometry and its applications*, University of Granada, Spain.
- August 2015: *From Noether currents to Hilbert definition and vice versa - a perspective on energy-momentum tensors*, 20th International Summer School on Global Analysis and its Applications - General Relativity: 100 Years After Hilbert, Stara Lesna, Slovakia.

Grants and projects

- e-COST Action CA18108, *Quantum Gravity in the Multimessenger Approach* (MC member).

- e-COST Action CA15117, *Cosmology and Astrophysics Network for Theoretical Advances and Training Actions (CANTATA)*, 2017-2020 (MC member).
- Three *Transilvania University Research Grants* in: 2013, 2016, 2018.
- *Post-doctoral fellowships for sustainable development* POSTDOC-DD, contract no. POSDRU/89/1.5/S/59323, Romania (June 2010 - May 2013) (*post-doctoral researcher*).
- Research Contract no. 5/5.02.2008 between the Romanian Academy and *Politehnica University of Bucharest* (*team member*).
- Research Contract no. 3/3.06.2009 between the Romanian Academy and *Politehnica University of Bucharest* (*team member*).
- CNCSIS AT Grant (Romanian Ministry of Education) no.55/2006, 2006-2007 (*team member*).

Conference organizing

- 23rd *International Summer School of Global Analysis and Applications*, 20-24.08.2018, Brasov, Romania (co-Chair of the Organizing Committee)
- 2 editions of the *International Conference on Mathematics and Computer Science (MACOS)* Braşov, Romania: 2014, 2016 (*Member of the Organizing Committee*);
- 3 editions of the *International Conference Finsler Extensions of Relativity Theory*: Brasov, 2011; Moscow, Rusia, 2012; Debrecen, Hungary, 2013 (*Member of the Organizing Committee*);

Editorial Board membership

- International Journal of Geometrical Methods in Modern Physics, ISSN 0219-8878.
- Bulletin of the Transilvania University of Brasov, Series III: Mathematics, Informatics, Physics, ISSN 20652151.

Reviewer activity

- International Journal of Geometrical Methods in Modern Physics, ISSN 0219-8878.
- Universe, ISSN 2218-1997
- Nonlinear Analysis: Real World Applications, ISSN: 1468-1218.
- International Journal of Modern Physics A, ISSN: 0217-751X.
- Journal of Mathematical Analysis and Applications, ISSN: 0022-247X.
- Journal of Geometry (Springer), ISSN: 1420-8997.
- Bulletin of "Transilvania" University of Brasov, Series III, Mathematics. Informatics. Physics, ISSN 2065-216X.
- Differential Geometry – Dynamical Systems, ISSN 1454-511X.
- Acta Math. Univ. Comenianae, ISSN 0862-9544.
- The Korean Journal of Mathematics, ISSN: 2288-1433.
- Analele ştiinţifice ale Universităţii „Alexandru Ioan Cuza”, Iaşi, ISSN 1221-8421.
- Symmetry: Culture and Science, ISSN 2226-1877.

Professional organization membership

- Lepage Research Institute, Presov, Slovakia, <http://www.lepageri.eu/> .

Research stays

- University of Tartu, Estonia (July 01 - October 31, 2010)

List of publications: Nicoleta VOICU (BRINZEI)

1. M. Hohmann, C. Pfeifer, N. Voicu, *Canonical variational completion of 4D Gauss-Bonnet gravity*, European Physical Journal Plus 136, 180 (2021).
2. N. Minculete, C. Pfeifer, N. Voicu, *Inequalities from Lorentz-Finsler norms*, to appear in: Mathematical Inequalities and applications, arXiv:2006.10816 [math.DG] (2020).
3. M. Hohmann, C. Pfeifer, N. Voicu, *The kinetic gas universe*, European Physical Journal C 80, 809 (2020).
4. M. Hohmann, C. Pfeifer, N. Voicu, *Cosmological Finsler spacetimes*, Universe 6 (5), 65 (2020).
5. A. Fuster, S. Heefer, C. Pfeifer, N. Voicu, *On the non-metrizability of Berwald Finsler spacetimes*, Universe 6 (5), 64 (2020).
6. M. Hohmann, C. Pfeifer, N. Voicu, *Kinetic gases as direct gravity sources*, Physical Review D 101, 024062 (2020).
7. M. Hohmann, C. Pfeifer, N. Voicu, *Finsler gravity action from variational completion*, Physical Review D 100, 064035 (2019).
8. N. Voicu, *Conformal maps between pseudo-Finsler spaces*, International Journal of Geometric Methods in Modern Physics 15(01), 1850003 (2018).
9. N. Voicu, *Volume forms for time orientable spacetimes*, Journal of Geometry and Physics 112 (2017) 85–94.
10. N. Voicu, *Energy-momentum tensors in classical field theories – a modern perspective*, International Journal of Geometric Methods in Modern Physics, 13, 1640001 (2016).
11. V. Balan, M. Rahula, N. Voicu, *Iterative calculus on tangent floors*, Analele Șt. Univ. "Ovidius" Constanta – Seria Matematică, vol 24 (1), 121–152 (2016).
12. N. Voicu, D. Krupka, *Canonical variational completion of differential equations*, Journal of Mathematical Physics 56, 043507 (2015).
13. N. Voicu: Chapter 5: *Source Forms and Their Variational Completions*, in vol. *The Inverse Problem of the Calculus of Variations - Local and Global Theory*, ed. Dmitri Zenkov, Atlantis Press- Springer (2015).
14. N. Voicu, *Biharmonic curves in Finsler spaces*, Journal of Korean Mathematical Society 51 (6), 1105–1122 (2014).
15. N. Voicu, *Biharmonic maps from Finsler spaces*, Publicationes Mathematicae Debrecen, 84 / 3-4 (4) (2014).
16. Balan V., Rahula M., Voicu N., *Tangent Structures in Geometry and Their Applications*, Editorial URSS Publishers, 2013, ISBN 978-5-396-00588-4.
17. N. Voicu, *Biharmonic maps between Finsler spaces*, Proc. of the 47-th Symposium on Finsler Geometry Nov. 23 - Nov. 25, 2012, Kagoshima, Japan.
18. N. Voicu, *Tidal tensors in the description of gravity and electromagnetism*, Journal of Nonlinear Mathematical Physics 19, 1250018 (2012).
19. M. Rahula, Petr Vasik, N. Voicu, *Tangent structures: sector-forms, jets and connections*, Journal of Physics: Conference Series (JPCS) 346 (ed. Viktor Abramov), 2012, 012023.
20. V. Balan, G. Yu. Bogoslovsky, S. S. Kokarev, D. G. Pavlov, S. V. Siparov, N. Voicu, *Geometrical Models of the Locally Anisotropic Space-Time*, Journal of Modern Physics 3(9A) (2012).
21. N. Voicu, *On a new unified geometric description of gravity and electromagnetism*, BSG Proceedings 19, 163-176, (2012).
22. N. Voicu, *Finslerian connections and the equations of spinning charged particles in General Relativity*, Proc. of 11th Int. Conf. of Applied Mathematics, Bratislava, Feb. 7th – 9th, 2012.
23. N. Voicu, *On the fundamental equations of electromagnetism in Finslerian spacetimes*, Progress In Electromagnetics Research, Vol. 113, 83-102 (2011).
24. N. Voicu, *Connections on tangent bundles, gravito-electromagnetic analogies and a unified description of gravity and electromagnetism*, Bulletin of Transilvania University of Brasov, Series III: Mathematics, Informatics, Physics 4(53), 113-122 (2011).
25. N. Voicu, *Tangent bundle geometry and a unified description of gravity and electromagnetism*, Proc. of the Int. Conf. "Riemannian Geometry and Its Applications", București, 2011.
26. N. Voicu, *New considerations on Einstein equations in pseudo-Finsler spaces*, AIP Conf. Proceedings 1283 (ed. Manuel de León , D. M. de Diego, R. M. Ros), 249-257 (2010).
27. Atanasiu, Gh., Balan, V., Brînzei, N., Rahula, *Differential-Geometric Structures - Tangent Fibrations, Connections in Bundles, Exponential Law and Jet Spaces* (in Russian), Editorial URSS Publishers, 2010, ISBN 978-5-397-00254-7.
28. Atanasiu, Gh., Balan, V., Brînzei, N., Rahula, *Second Order Differential Geometry and Applications - Miron-Atanasiu Theory* (in Russian), Editorial URSS Publishers, 2010, ISBN 978-5-397-00800-6.
29. N. Voicu, S.V. Siparov, *A new approach to electromagnetism in anisotropic spaces*, BSG Proceedinds 17, 235-245 (2010).
30. N. Voicu, *Equations of electromagnetism in some special anisotropic spaces. Part 2*, Hypercomplex Numbers in Geometry and Physics 2 (14), Vol 7, 61-72 (2010).
31. N. Voicu-Brinzei, S. Siparov, *Mathematical formalism for an experimental test of the space-time anisotropy*, AIP Conf. Proceedings 1206 (ed.: Sandip K. Chakrabarti , A.I. Zhuk, Gennady S. Bisnovaty-Kogan), 152-162 (2009).
32. N. Brinzei, *Projective relations for m-th root metric spaces*, Journal of the Calcutta Mathematical Society 5(1-2), 21-35 (2009).
33. N. Brinzei, *On cubic Berwald spaces*, Rev. Bull. Calcutta Math. Society 17(1-2), 75-84 (2009).
34. N. Voicu-Brinzei, *Anisotropy and analogies between gravity and electromagnetism*, Proc. of Int. Conf. "Physical Interpretations of Relativity Theory", Moscow, 2009, pp. 124-132.
35. N. Brinzei, *A Special nonlinear connection in second order geometry*, Acta Mathematica Academiae Paedagogicae Nyíregyháziensis 24(1), 33-49 (2008).
36. N. Brinzei, S.V. Siparov, *Equations of electromagnetism in some special anisotropic spaces*, Hypercomplex Numbers in Geometry and Physics, no. 2(10), Vol. 5, 44-55 (2008).
37. N. Brinzei, S.V. Siparov, *On the possibility of the OMPR effect in the space with Finsler geometry (Part II)*, Hypercomplex Numbers

- in Geometry and Physics 2 (10), Vol 5, 56-63 (2008).
38. N. Brinzei, S.V. Siparov, *On the possibility of the OMPR effect in the space with Finsler geometry*, Hypercomplex Numbers in Geometry and Physics 2(8), vol. 4, 41-52 (2007).
 39. Brînzei, N., *Geodesics and Jacobi Fields in Second Order Geometry* (PhD thesis, in Romanian), Ed. Univ. „Transilvania”, Braşov, 2007, ISBN 978-973-598-027-6.
 40. Atanasiu, Gh., Brînzei, N., *Maxwell equations on the 2-tangent bundle*, Mathematica, Cluj-Napoca, Tome 49 (2), 107-115 (2007).
 41. Gh. Atanasiu, N. Brinzei, *Einstein equations for the homogeneous prolongation of a Finsler metric to the tangent bundle*, Hypercomplex Numbers in Geometry and Physics 2(8), vol. 4, 53-64 (2007).
 42. Balan, V., Brinzei, N.: *Einstein equations for (h,v) - Berwald-Moor relativistic models*, Balkan Journal of Geometry and Its Applications, vol. 11 (2), 20-26 (2006).
 43. Balan, V., Brînzei, N., Lebedev, S., *Geodesics, connections and Jacobi fields for Berwald-Moor quartic metrics*, Hypercomplex Numbers in Geometry and Physics 2 (6), Vol 3, 113-122 (2006).
 44. Brînzei-Voicu N., *The exponential map on the second order tangent bundle*, Studia Univ. Babes-Bolyai, Math. 50(4), 83-96 (2005).
 45. Balan, V., Brinzei, N.: *Berwald-Moor-type (h,v) -relativistic models*, Hypercomplex Numbers in Geometry and Physics, 2(4), 107-113 (2005).
 46. Atanasiu, Gh., Voicu, N.: *Einstein equations in the geometry of second order*, Studia Univ. Babes-Bolyai, Math., Cluj-Napoca 50(3), 21-29 (2005).
 47. Atanasiu, Gh., Stoica, E., Brînzei, N.: *Curves and Surfaces* (in Romanian), MatrixRom, Bucureşti, 2005, ISBN 973-685-979-7.
 48. Atanasiu, Gh., Brinzei, N.: *The Berwald-Moor metric in the tangent bundle of second order*, Hypercomplex Numbers in Geometry and Physics, 2(4), 114-122 (2005).
 49. Atanasiu, Gh., Brinzei, N., *Einstein equations in the higher order differential geometry*, Proc. of int. Meeting "Physical Interpretations of Relativity Theory", 4.07-7.07.2005, Bauman Moscow St. Tech. Univ., pp. 255-262
 50. Balan, V., Voicu N., *Distinguished geodesics and Jacobi fields on first order jet spaces*, Central European Journal of Mathematics, 2(4) (2004), pp. 1-10.
 51. Atanasiu, Gh., Voicu N., *Lifts of the Almost Complex Structures to $T(\text{Osc}^2 M)$* , Novi Sad J. Math. 29(3), 35-53 (1999)