

List of papers

a) 10 most relevant ISI papers in the topic of the Habilitation thesis:

1. [BM11] Bucataru, I., Muzsnay, Z.: Projective metrizable and formal integrability, *Symmetry Integrability and Geometry: Methods and Applications*, 7(2011), 22 p.
2. [BCD11] Bucataru, I., Constantinescu, O.A., Dahl, M.F.: A geometric setting for systems of ordinary differential equations, *International Journal of Geometric Methods in Modern Physics*, vol 8, no.6 (2011), 1291-1327
3. [BC10] Bucataru, I., Constantinescu, O.: Helmholtz conditions and symmetries for the time dependent case of the inverse problem of the calculus of variations, *Journal of Geometry and Physics*, vol. 60, no 11 (2010), 1710-1725.
4. [BD10a] Bucataru, I., Dahl, M.F.: A complete lift for semisprays, *International Journal of Geometric Methods in Modern Physics*, vol. 7, no 2 (2010), 267-287.
5. [BD09] Bucataru, I., Dahl, M.F.: Semi-basic 1-forms and Helmholtz conditions for the inverse problem of the calculus of variations, *Journal of Geometric Mechanics*, vol. 1, no. 2 (2009), 159-180.
6. [BM09] Bucataru, I., Miron, R.: The geometry of systems of third order differential equations induced by second order Lagrangians, *Mediterranean Journal of Mathematics*, vol. 6, no. 4 (2009), 483-500.
7. [B07a] Bucataru, I.: Canonical semispray for higher order Lagrange spaces, *Comptes Rendu Mathematique Acad. Sci. Paris, Ser. I*, vol. 345 (2007), 269-272.
8. [B07b] Bucataru, I., Metric nonlinear connections, *Differential Geometry and its Application*, vol. 25, no. 3 (2007), 335-343.
9. [B05a] Bucataru, I., Linear connections for systems of higher order differential equations, *Houston Journal of Mathematics*, vol. 31, no. 2 (2005), 315-332.
10. [ABR03] Antonelli, P.L., Bucataru, I., Rutz, S.F.: Computer algebra and two and three-dimensional Finsler Spaces. *Publicationes Mathematicae - Debrecen*, vol. 62 (2003), 289-313.

b) Ph.D Thesis:

1. Bucataru, I.: Prolongations of Riemannian, Finslerian and Lagrangian structures to higher order structures, *Universitatea "Alexandru Ioan Cuza" din Iasi*, 1998.

c) Books (chapters in books)

1. [BM07b] Bucataru, I., Miron, R.: Finsler-Lagrange geometry. Applications to dynamical systems, *Editura Academiei Romane*, 2007, 252 + xvii pages, ISBN 978-973-27-1527-7.
2. [AB03] Antonelli, P.L., Bucataru, I.: KCC-theory of a System of Second Order Differential Equations. *Handbook of Finsler Geometry*, vol. I, 83-174, Kluwer Academic Publisher, 2003.
3. [MAB03] Miron, R., Anastasiei, M., Bucataru, I.: The Geometry of Lagrange spaces. *Handbook of Finsler Geometry*, vol. II, 969-1122, Kluwer Academic Publisher, 2003.

d) Other ISI papers

1. [BD11] Bucataru, I., Dahl, M.F.: Descending maps between slashed tangent bundles, *Publicationes Mathematicae - Debrecen*, vol. 79, no. 1-2 (2011), 15, 231-250.
2. [BD10b] Bucataru, I., Dahl, M.F.: A geometric space without conjugate points, *Balkan Journal of Geometry and its Applications*, vol. 15, no 1 (2010), 17-40.
3. [BS09b] Bucataru, I., Slawinski, M.A.: Invariant properties for finding distance in space of elasticity tensors, *Journal of Elasticity*, vol. 94, no. 2 (2009), 97-114.
4. [BBS08a] Bona, A., Bucataru, I., Slawinski, M.A.: Space of SO(3)-orbits of elasticity tensors, *Archives of Mechanics*, vol. 60, no. 2 (2008), 123-138.
5. [BBS08b] Bona, A., Bucataru, I., Slawinski, M.A.: Inversion of ray velocity and polarization for elasticity tensor, *Journal of Applied Geophysics*, vol. 65, no. 1(2008), 1-5.
6. [BM07a] Bucataru, I. and Miron, R.: Nonlinear connections for nonconservative mechanical systems, *Reports on Mathematical Physics*, vol. 59, no. 2(2007), 225-241.
7. [BBS07a] Bona, A., Bucataru, I. and Slawinski, M.A, Material symmetries versus wavefront symmetries, *The Quarterly Journal of Mechanics and Applied Mathematics*, vol. 60, no. 2(2007), 73-84.
8. [BBS07b] Bona, A., Bucataru, I., Slawinski, M.A., Coordinate-free Characterization of Symmetry Classes of Elasticity Tensors, *Journal of Elasticity*, vol. 87, no. 2-3(2007): 109-132.
9. [BS05] Bucataru, I. and Slawinski, M.A: Generalized orthogonality between rays and wavefronts in anisotropic inhomogeneous media. *Nonlinear Analysis: Real World Applications*, vol. 6 (2005), 111-121.
10. [BBS04a] Bona, A., Bucataru, I., Slawinski, M.A: Characterization of Elasticity-Tensor Symmetries Using SU(2). *Journal of Elasticity*, vol. 75, no. 3(2004), 267-289.
11. [BBS04b] Bona, A., Bucataru, I., Slawinski, M.A: Material symmetry of elasticity tensors. *Quarterly Journal of Mechanics and Applied Mathematics*, vol. 57, no. 4(2004), 583-598.
12. [BE04] Bucataru, I., Epstein, M.: Geometrical theory of dislocations in bodies with microstructure. *Journal of Geometry and Physics*, vol. 52, no. 1 (2004), 57-73.
13. [AB01b] Antonelli, P.L., Bucataru, I.: Volterra-Hamilton production models with discounting; general theory and worked examples. *Nonlinear Analysis: Real World Applications*, vol. 2(2001), 337-356.
14. [B00] Bucataru, I.: Horizontal lifts in the higher order geometry. *Publicationes Mathematicae - Debrecen*, vol.56, no. 1-2 (2000), 21-32.

d) Conference papers published in ISI proceedings (journals)

1. [BS09a] Bucataru, I., Slawinski, M.A.: On convexity and detachment of innermost wavefront-slowness sheet, *Geophysics*, vol. 74, no. 5(2009), WB63-WB66.
2. [EB03] Epstein, M., Bucataru I.: Continuous Distributions of Dislocations in Bodies with microstructure. *Journal of Elasticity*, vol. 70, no. 1 (2003), 237-254.
3. [B03] Bucataru, I.: Nonholonomic frames for Finsler spaces with (α, β) metrics. *Proceedings of the conference on Finsler and Lagrange Geometries*, Iasi, August 26-31, 2001, Kluwer Academic Publishers, 69-78(2003).
4. [AB01d] Antonelli, P.L., Bucataru, I.: On Holland's frame for C-reducible Finsler space. *Proceedings of the Third World Congress of Nonlinear Analysts (WCNA-2000)*, *Nonlinear Analysis*, 47(2001), 6147-6145.

5. [MAB00] Miron, R., Anastasiei, M., Bucataru, I.: On the Geometry of Higher Order Lagrange Spaces. *Acta Physica Hungarica New Series-Heavy Ion Physics*, 11(2000), 1-10

d) Other papers (indexed in MR and ZBL)

1. [B05b] Bucataru, I.: Some basic properties of Lagrange spaces. *Sci. Ann. Univ. Agric. Sci. Vet. Med.* 48 (2005), no. 2, Proceedings of the 4th Annual Symposium on Mathematics Applied in Biology & Biophysics, 237-245, MR 2397180, Zbl 1165.53334.
2. [AB01a] Antonelli, P.L., Bucataru, I.: New results about the geometric invariants in KCC-theory. *Analele Univ. "Al.I.Cuza" Iasi*, tom XLVII, s.I.a, 2(2001), MR1977395, Zbl 1066.53120.
3. [AB01c] Antonelli, P.L., Bucataru, I.: Finsler connections in anholonomic geometry of a Kropina space. *Nonlinear Studies*, 8(2001), no 1, 171-184, MR 1856224, Zbl 0996.53019.
4. [B99a] Bucataru, I.: The Jacobi field for a spray on the tangent bundle. *Novi Sad J. Math.*, vol. 29, 3(1999), 69-78, MR1770986, Zbl1029.53504.
5. [B99b] Bucataru, I.: Semisprays and vertical projectors in the higher order geometry. *Algebras, Groups and Geometries*, 16, 1(1999), Proceedings of the 10th National Conference on Finsler, Lagrange, and Hamilton Geometries, Craiova, Romania, February 1998, 31-38, MR1704086, Zbl 1004.53017.
6. [B99c] Bucataru, I.: Finsler connection in the higher order geometry. Proceedings of the Workshop on Global Analysis, Differential Geometry and Lie Algebras, Differential Geometry and Lie Algebras, Geometry Balkan Press, Ed. Gr. Tsagas, 3(1999), 15-22, MR1710844, Zbl 0948.53042.
7. [BR98] Bucataru, I., Roman, M.: Linear connection induced by a nonlinear connection in the geometry of order two. *Memoriile Sect. St. Acad. Romana*, XXI (1998), 17-24, MR1990707.
8. [B98] Bucataru, I.: Sprays and homogeneous connection in the higher order geometry. *Stud. si Cercet. Mat.*, vol.50, 5-6(1998), MR1840144, Zbl 1017.53027.
9. [AB97a] Anastasiei, M. and Bucataru, I.: Jacobi fields in generalised Lagrange spaces. *Rev. Roumaine Math. Pures et Appl.*, vol.42, 9-10(1997), 689-695, MR1656641, Zbl 0928.53035.
10. [AB97b] Anastasiei, M., Bucataru, I.: A notable Submersion in the Higher Order Geometry. Proceedings of the Workshop on Global Analysis, Differential Geometry and Lie Algebras, Geometry Balkan Press, Ed. Gr. Tsagas, 1(1997), 1-10, MR1648026, Zbl 0903.53047.
11. [B97] Bucataru, I.: Characterisation of the nonlinear connection in the higher order geometry. *Balkan Journal of Geometry and its Applications*, vol.2, 2(1997), 13-22, MR1662085, Zbl 0905.53046.
12. [B96] Bucataru, I.: Connection map in the higher order geometry. *An. St. Univ. "Al.I.Cuza" Iasi, Ser. I Mat.*, XLII(1996), 253-258, MR1458940, Zbl 0880.53019.