Curriculum Vitæ

Marius BULIGA

Institutul de Matematică al Academiei Române, PO-BOX 1-764, 014700 Bucureşti, România

e-mail: Marius.Buliga@imar.ro

Informaţii complete, cu toate articolele disponibile online la adresa
http://www.imar.ro/ mbuliga/

Open notebook: http://chorasimilarity.wordpress.com/

Domenii de cercetare:

- Graphical calculi, emergent algebras
- spaces with dilations, non-euclidean analysis, geometry and analysis in metric spaces, sub-riemannian geometry,
- convex analysis, convexity, quasiconvexity, bipotentials,
- calculus of variations with applications to brittle fracture mechanics

Studii:

- 2007 - Habilitation à diriger des recherches [i.e. abilitare de conducere doctorate in Franţa], Sciences Mathématiques, Université des Sciences et technologies de Lille, jury: Olivier Allix (ENS Cachan), Pierre Alart (Univ. Montpellier II), Tudor Ratiu (EPFL), Ioan R. Ionescu (Univ. Paris 13), Djimédo Kondo (USTL), Géry de Saxcé (USTL), Claude Vallée (Univ. Poitiers).
- 1997 - Ph.D. Matematică, Institutul de Matematică al Academiei Române. Titlul tezei: Formulări variaţionale în mecanica ruperii fragile. Conducător: Eugen Sóos.
- 1995 - D.E.A. [i.e. master] în Nonlinear Mechanics, École Polytechnique, Paris. Titlul disertaţiei: Modélisation de la décohesion d'interface fibres-matrice dans les matériaux composites .
- 1994 - Diplôme d'auditeur, École Polytechnique, Paris, majeure Science de l'Ingenieur. Dissertation title: Reconstruction d'un champ de contraintes résiduelles à partir des contraintes mesurées sur des surfaces successives .

- 1992 - Licenţa, Secţia de Mecanica Solidelor, Facultatea de Matematică, Universitatea Bucureşti. Titlul disertaţiei: Substratul topologic al diferenţiabilităţii.

Poziţii ocupate:

- din 2000 - CS 3— Institutul de Matematică al Academiei Române
- aug. 2010 - feb. 2011, profesor asociat invitat, Institutul de Matematică, UFRJ, Rio de Janeiro, Brazilia
- 2001-2006 - post doctorat la catedra de Geometric Analysis la Ecole Polytechnique Federale de Lausanne, Elveţia
- 1995-1999 - stagiar, asistent, cercetator— Institutul de Matematică al Academiei Române
- Feb. 1993 - Dec. 1993 - asistent — Facultatea de Construcţii, Bucureşti
- Sept. 1992 - Feb. 1993 - profesor de informatică — Lic. Poni College, Bucureşti

Cercetător invitat:

- 2010, o lună la IHES, Paris, cu proiectul: Dilatation structures: geometric and algebraic aspects of differential analysis in metric spaces
- 2009, o lună la LMS-Université de Poitiers,
- 2008, o lună la LMT Cachan, École Normale Supérieure de Cachan,
- 2005, o lună la Département de Mécanique Fondamentale, Université de Lille 1, UFR de Mathématiques Pures et Appliquées, Université des Sciences et des Technologies de Lille (Lille-1),

- 2004, două săptamâni la IHES, Paris,

- 2000, 3 luni la Département de Mathématiques, École Polytechnique Fédérale de Lausanne,

Premii, granturi, concursuri:

- 2008, Premiul Spiru Haret al Academiei Române,

- 2010, concursul pentru postul de profesor asociat invitat la Institutul de Matematică, Universidade Federal do Rio de Janeiro, Brazil, (2010)

- cu Laurenţiu Leuştean, grant PN-II-ID-PCE-2011-3-0383 Proof mining in metric analysis, geometric group theory and ergodic theory , (2011)

- cu Géry de Saxcé şi Claude Vallée, grant LEA common project (Laboratoire Européen Associé CNRS Franco-Roumain) Math Mode 2009-2010, Bipotentials for non monotone multivalued operators: fundamental results and applications ,

- iniţiator al SCOPES funded grant Lausanne-Bucharest common project on topology, geometry and mechanics

- membru în grantul MCT-ANSTI 627/1998-1999 Energetic Criteria in Fracture Mechanics

- membru în grantul CEEX06-11-12/2006

Predare:

- Cursuri:
  - Introduction to metric spaces with dilations, Instituto de Matemática, Universidade Federal do Rio de Janeiro, 2010-2011
  - Teoria Relativităţii (anul II), 1993-1994, Facultatea de Matematică, Universitatea Bucureşti
- Seminarii la IMAR, pe subiectele: Free discontinuity problems and spaces of functions with bounded variation, Energetic methods in brittle fracture mechanics, Metric geometry.

Activitate ştiinţifică

- Conferinţe:

1992- Lie-Lobacevski Symposium, Université de Bucharest,

1996- Conférences Nationales de Mécanique des Solides (Roumanie), Constanta 1996, Iasi 1997

1996- Differential Equations and Calculus of Variations, summer school and workshop, Pisa, 1996

1999- M. Buliga, Energetic criterions in brittle fracture mechanics, The Fourth International Congress on Industrial and Applied Mathematics (ICIAM 99), 1999

1999- Applied Analysis and Mechanics Seminars, Hilary Term 1999, Mathematical Institute, Oxford, Quasiconvexity versus group invariance , invited by J.M. Ball

1999- Scuola Internazionale Superiore di Studi Avanzati, Trieste, The variational complex of a diffeomophisms group , invited by A. Braides

2000- Département de Mathématiques, École Polytechnique Fédérale de Lausanne, Variational rigidity , invited by T. Ratiu

2002- Mathematical Institute, University of Bern, Towards rectifiability in Carnot groups: a theory of irreducible representations of volume preserving bi-Lipschitz homeomorphisms , invited by M. Reimann

2003- Mathematical Institute, University of Bern, two lectures during the Séminaire Borel 2003 Tangent spaces to metric spaces , IIIéme Cycle Romand de Mathmatiques, Switzerland

2004- Centre Bernoulli, École Polytechnique Fédérale de Lausanne, A claim about Hamiltonian mechanics , invited by T. Ratiu

2004- Mathematical Institute, University of Bern, Metric profiles and Mitchell theorem 1 , invited by M. Reimann

2004- IMA - EPFL , Majorisation and multiplicative quasiconvexity , invited by B. Dacorogna

2004- Journées d'automne de la Société Mathématique Suisse, Curvature of metric profiles

2004- Universit at Stuttgart, Fakult at Mathematik und Physik, Convexity notions, groups and nonlinear elasticity invited by A. Mielke.

2005- Mathematical Institute, University of Bern, Differential structures for sub-Riemannian spaces , invited by M. Reimann.

2005- Centre de Mathématiques et d'Informatique, Université de Provence, Séminaire de Géométrie et Singularités, Flots hamiltoniens d'isométries invited by B. Kolev.

2005- Laboratoire de Mécanique de Lille, Un test pour les critères énérgetiques de rupture , invited by G. De Saxcé.

2006- GAMM 2006, Berlin, Germany, G. De Saxcé, M. Buliga, C. Vallée, C. Lerinţiu, Construction of a bipotential for a multivalued constitutive law

2006- 8-ème Colloque Franco-Roumain de Mathématiques Appliquées, Chambéry, Convexité de Schur et élastomères nématiques

2006- Geometric and Asymptotic Group Theory with Applications, Manresa,Spain, satellite conference of ICM2006 Madrid, Dilatation Structures

2006- December Monthly Conference of the Institute of Mathemathics of the Romanian Academy, Bucharest, Travelling salesman through fractals

2007- Geometric linearization of graphs and groups, January 22-26, 2007, Centre Interfacultaire Bernoulli, EPFL, Lausanne, Switzerland, Dilatation structures and linearization of self-similar actions

2007- International Symposium on Defect and Material Mechanics, March 25-29, 2007 - Aussois, France, Fracture fattening and energy release rates

2007- 6-th Congress of Romanian Mathematicians, June 28 - July 4, 2007 - Bucharest, Romania, Section: Theoretical Computer Science, Operations Research and Mathematical Programming, Self-similar dilatation structures and automata

2007- Viertes Deutsch-Rum anisches Seminar uber Geometrie Dortmund, 15-18 July 2007, Linear dilatation structures and conical groups

2007- The eight international workshop on differential geometry and its applications, August 19-25, 2007, Babeş-Bolyai University, Cluj-Napoca, Romania, Nonholonomic spaces and geometric group theory

2008- Petit-dej, LMT Cachan, May 2008, A hamiltonian associated to the Ambrosio-Tortorelli functional and a proposal concerning a brittle damage model

2009- Workshop on Differential Geometry and its Applications Iasi, September 2 - 4, 2009, Approximately symmetric spaces amd their metric geometry

2009- LMA- Univ.de Provence, Oct. 2009, Comment utiliser le bipotentiel dans un schéma numérique, suivant Berga et de Saxce

2010- IECN-Nancy, Séminaire Groupes de Lie et analyse harmonique , Apr. 2010, Gómétrie approximative du point de vue algébrique

2011- IM-UFRJ, Rio de Janeiro, 10-20 Jan. 2011, Summer School on Nonlinear analysis, Carnot-Carathéodory spaces as metric spaces with dilations

2011- LEA Math Mode Colloque, 28-29 Nov., IMAR, Non-euclidean analysis of dilation structures

2012- (unfortunately not able to attend but see the course notes on my homepage) CIMPA research school on sub-riemannian geometry, January 30 - February 9, Lebanese University, Beirut (Lebanon), Metric spaces with dilations and sub-riemannian geometry from an intrinsic viewpoint

- alte stagii de cercetare:
  - LMS, École Polytechnique, Paris, 1994
  - LPMTM, Université Paris 13, 1995
- burse:
  - bourse dans le Programme Européen de l' École Polytechnique, Paris, 1994
  - bourse de D.E.A. de l' École Polytechnique, Paris, 1995

Limbi cunoscute: Română, Engleză, Franceză

Listă de lucrări

- **trimis la publicare**

1. Sub-riemannian geometry from intrinsic viewpoint, arXiv:1206.309, (re-trimisă la publicare, după incetarea activităţii a unei reviste a SMF)

- **în curs de publicare:**

2. Graphic lambda calculus, arXiv:1305.5786, acceptată la Complex Systems

- **publicate:**

3. cu G. de Saxcé, C. Vallée, A variational formulation for constitutive laws described by bipotentials, Mathematics and Mechanics of Solids **18**(2013), no. 1, 78-90, **FI = 1.012** , arxiv:1110.6598

4. A priori inequalities between energy release rate and energy concentration for 3D quasistatic brittle fracture propagation, Mathematics and Mechanics of Solids, **16** (2011), no. 3, 265-282 , **FI = 1.012** , (pdf)

5. A characterization of sub-riemannian spaces as length dilation structures constructed via coherent projections, Commun. Math. Anal. **11** (2011), No. 2, 70-111, arxiv:0810.5042

6. Infinitesimal affine geometry of metric spaces endowed with a dilatation structure, Houston Journal of Mathematics, **FI = 0.359** , **36** 1 (2010), 91-136, arxiv:0804.0135

7. Braided spaces with dilations and sub-riemannian symmetric spaces. in: Geometry. Exploratory workshop on differential geometry and its applications, eds. D. Andrica, S. Moroianu, Cluj-Napoca (2011), 21-35, arxiv:1005.5031

8. cu G. de Saxcé, C. Vallée, Blurred maximal cyclically monotone sets and bipotentials, Analysis and Applications 8 (2010), no. 4, 1-14, **FI = 1.140** , arxiv:0905.0068

9. cu G. de Saxcé, C. Vallée, Blurred constitutive laws and bipotential convex covers, Mathematics and Mechanics of Solids, **16**(2), (2011), 161-171 , **FI = 1.012** , arxiv:0905.0067

10. cu G. de Saxcé, C. Vallée, Non maximal cyclically monotone graphs and construction of a bipotential for the Coulomb's dry friction law, J. of Convex Analysis, **17** (2010), No. 1, 81-94, **FI = 0.823** , arxiv:0802.1140

11. cu G. de Saxcé, C. Vallée, Bipotentials for non monotone multivalued operators: fundamental results and applications, Acta Applicandae Mathematicae, 110, 2(2010), 955-972, **FI = 0.899** , arxiv:0804.1863

12. Hamiltonian inclusions with convex dissipation with a view towards applications, 24 pp, Ann. of the AOSR, Mathematics and its Applications, **1** 2 (2009),228-251, arxiv:0810.1419

13. Four applications of majorization to convexity in the calculus of variations, Linear Algebra and its Appl., **429**, (2008), 1528-1545, **FI = 0.974** , (pdf)

14. Dilatation structures in sub-riemannian geometry, in: Contemporary Geometry and Topology and Related Topics, Cluj-Napoca, Cluj University Press (2008), 89-105, arxiv:0708.4298

15. cu G. de Saxcé, C. Vallée, Existence and construction of bipotentials for graphs of multivalued laws, J. of Convex Analysis, **15**, 1, (2008) , 087–104, **FI = 0.823** , arxiv:math/0608424

16. Dilatation structures I. Fundamentals, J. Gen. Lie Theory Appl., **1** (2007), No 2, 65-95, arxiv:math/0608536

17. Lower semi-continuity of integrals with G-quasiconvex potential, Z. Angew. Math. Phys., **53**, 6, 949-961, (2002), **FI = 0.938** arxiv:math/0105097

18. Brittle crack propagation based on an optimal energy balance, Rev. Roum. des Math. Pures et Appl., **45**, no. 2, 201–209 (2001), (ps)

19. Geometric evolution problems and action-measures, PAMM Appl. Math. Bull., vol. **LXXXVI** (1998), T. U. Budapest, 53-58,

20. Energy Minimizing Brittle Crack Propagation, J. of Elasticity, **52**, 3, 201-238, (1998) , **FI = 1.038** , (pdf)

21. On Special Relativistic Approach to Large Deformations in Continuous Media, Rev. Roum. de Math. Pures et Appl., t. XLI, **1-2**, 5-15, (1996)

22. cu P. Ballard, A. Constantinescu, Reconstruction d'un champ de contraintes résiduelles à partir des contraintes mesurées sur des surfaces successives. Existence et unicité. C. R. Acad. Sci., Paris, Sér. II 319, No.10, 1117-1122 (1994)

23. Topological Substratum of the Derivative, Mathematical Reports, 45, **6**, 453-465, (1993)

- **proceedings:**

24. cu G. de Saxcé, C. Vallée, Un critère d'existence et une méthode de construction des bipotentiels, (2009), 19ème Congrès Français de Mécanique, Marseille 24-28 août 2009,

25. cu G. de Saxcé, C. Vallée, Bipotentials for unilateral contact with dry friction: fundamentals and numerical algorithms, 7-th EUROMECH Solid Mechanics Conference, J. Ambrosio et.al. (eds.) Lisbon, Portugal, 7 - 11 September 2009, 1-17,

26. Self-similar dilatation structures and automata, Proceedings of the 6-th Congress of Romanian Mathematicians, Bucharest, 2007, vol. 1, 557-564 (2008), arxiv:0709.2224

27. cu G. de Saxcé, C. Vallée, C. Lerintiu, Construction of a bipotential for a multivalued constitutive law, Proc. Appl. Math. Mech., vol. **6** , no. 1 (2006), 153-154

- **e-printuri arXiv nepublicate, dar citate de alţi autori in articole publicate:**

28. Sub-Riemannian geometry and Lie groups. Part I, (2002), arxiv:math.MG/0210189

29. Symplectic, Hofer and sub-Riemannian geometry, (2002), arxiv:math.SG/0201107,

- Majorisation with applications to the calculus of variations (2001), arxiv:math/0105044 (articol multiplu citat ca e-print arxiv, va fi rescris si publicat ca Four applications of majorization to convexity in the calculus of variations, Linear Algebra and its Appl., **429**, (2008), 1528-1545, apoi va primi alte citari in forma publicata)

- **e-printuri arXiv nepublicate, dar citate de alţi autori in arXiv:**

30. Normed groupoids with dilations arxiv:1107.2823

31. Contractible groups and linear dilatation structures (2007) arxiv:0705.1440

- **popularizare:**

32. Vrănceanu' nonholonomic spaces from the viewpoint of distance geometry, (in romanian, original title: Spaţiile neolonome ale lui Vrănceanu din punctul de vedere al geometriei distanţei), Gazeta Matematica A, **4** (2008), 349-352

- **alte articole arXiv:**

33. Origin of emergent algebras, arXiv:1304.3694

34. Geometric Ruzsa triangle inequality in metric spaces with dilations, arXiv:1304.3358

35. On graphic lambda calculus and the dual of the graphic beta move, arXiv:1302.0778

36. Graphic lambda calculus and knot diagrams , arXiv:1211.1604

37. Local and global moves on locally planar trivalent graphs, lambda calculus and -Scale , arXiv:1207.0332

38. Local and global moves on locally planar trivalent graphs, lambda calculus and -Scale , arXiv:1207.0332

39. -Scale, a lambda calculus for spaces with dilations , arXiv:1205.0139

40. Emergent algebras, arXiv:0907.1520 (articol care a avut mai multe peer-review-uri care l-au declarat tehnic corect, dar pina acum nu a fost acceptat)

41. Computing with space: a tangle formalism for chora and difference, arXiv:1103.6007

42. More than discrete or continuous: a bird's view , arXiv:1011.4485

43. Boring mathematics, artistes pompiers and impressionists, arXiv:1011.3465 (articol de opinie, comentat pe net)

44. What is a space? Computations in emergent algebras and the front end visual system , arXiv:1009.5028

45. Introduction to metric spaces with dilations, arXiv:1007.2362

46. Uniform refinements, topological derivative and a differentiation theorem in metric spaces, arXiv:0911.4619

47. On the Kirchheim-Magnani counterexample to metric differentiability, arXiv:0710.1350

48. Microfractured media with a scale and Mumford-Shah energies, arXiv:0704.3791
49. Dilatation structures II. Linearity, self-similarity and the Cantor set, arXiv:math/0612509
50. The variational complex of a diffeomorphisms group , arXiv:math/0511302
51. Perturbed area functionals and brittle damage mechanics , arXiv:math/0511240
52. Quasiconvexity versus group invariance , arXiv:math/0511235
53. Sub-Riemannian geometry and Lie groups. Part II. Curvature of metric spaces, coadjoint orbits and associated representations , arXiv:math/0407099
54. Curvature of sub-Riemannian spaces , arXiv:math/0311482
55. Tangent bundles to sub-Riemannian groups , arXiv:math/0307342

Citări în reviste cu FI$\geq$ 0.3 , 2007-2012:

1. S.V. Selivanova, The tangent cone to a quasimetric space with dilations, **Siberian Math. J. 51(2)** (2010), 388 – 403; FI=0.365
   Citeaza: M. Buliga, *Dilatation structures I. Fundamentals*, **J. Gen. Lie Theory Appl. vol. 1(2)** (2007), pag. 65 – 95
2. S.V. Selivanova, The tangent cone to a quasimetric space with dilations, **Siberian Math. J. 51(2)** (2010), 388 – 403; FI=0.365
   Citeaza: M. Buliga, textitDilatation structures in sub-riemannian geometry, **in: Contemporary Geometry and Topology and Related Topics** Cluj-Napoca, Cluj University Press (2008), 89-105
3. M. Negri, A comparative analysis on variational models for quasi-static brittle crack propagation, **Advances in Calculus of Variations 3(2)** (2010), 149 – 212; FI=0.688
   Citeaza: M. Buliga, *Energy Minimizing Brittle Crack Propagation*, **J. of Elasticity vol. 52(3)** (1999), pag. 201 – 238
4. C. Miehe, F. Welschinger, M. Hofacker, Thermodynamically consistent phasefield models of fracture: Variational principles and multifield FE implementations, **Int. J. Numer. Meth. Engng. 83(10)** (2010), 1273 – 1311; FI=2.009
   Citeaza: M. Buliga, *Energy Minimizing Brittle Crack Propagation*, **J. of Elasticity vol. 52(3)** (1999), pag. 201 – 238
5. C. Miehe, M. Hofacker, F. Welschinger, A phase field model for rate-independent crack propagation: Robust algorithmic implementation based on operator splits, **Computer Meth. Appl. Mech. Engng. 199** (2010), 45 – 48; FI=2.615
   Citeaza: M. Buliga, *Energy Minimizing Brittle Crack Propagation*, **J. of Elasticity vol. 52(3)** (1999), pag. 201 – 238
6. M Prechtel, G Leugering, P Steinmann, Towards optimization of crack resistance of composite materials by adjustment of fiber shapes, **Engineering Fracture Mechanics 78(6)** (2011), 944 – 960; FI=1.353
   Citeaza: M. Buliga, *Energy Minimizing Brittle Crack Propagation*, **J. of Elasticity vol. 52(3)** (1999), pag. 201 – 238

7. M. Hofacker, C. Miehe, A phase field model of dynamic fracture: Robust field updates for the analysis of complex crack patterns, **Int. J. Numer. Meth. Engng.** (2012), doi: 10.1002/nme.4387 (published online 31 jul 2012); FI=2.009
Citeaza: M. Buliga, *Energy Minimizing Brittle Crack Propagation*, **J. of Elasticity vol. 52(3)** (1999), pag. 201 – 238

8. R. Tsotsova, Variational approach to the freediscontinuity problem of inverse crack identification, **Commun. Numer. Meth. Engng. 24** (2008), 2216 – 2228 ; FI=1.409
Citeaza: M. Buliga, *Energy Minimizing Brittle Crack Propagation*, **J. of Elasticity vol. 52(3)** (1999), pag. 201 – 238

9. G.E. Oleaga, The anti-symmetry principle for quasi-static crack propagation in Mode III, **International J. Fracture 147(1-4)** (2007), 21 – 33 ; FI=1.485
Citeaza: M. Buliga, *Energy Minimizing Brittle Crack Propagation*, **J. of Elasticity vol. 52(3)** (1999), pag. 201 – 238

10. T. Takaishi, M. Kimura , Phase field model for mode III crack growth in two dimensional elasticity, **Kybernetika 45(4)** (2009), 605 – 614 ; FI=0.454
Citeaza: M. Buliga, *Energy Minimizing Brittle Crack Propagation*, **J. of Elasticity vol. 52(3)** (1999), pag. 201 – 238

11. M. Hofacker, C. Miehe, Continuum phase field modeling of dynamic fracture: variational principles and staggered FE implementation, **International J. Fracture** (2012), doi:10.1007/s10704-012-9753-8 , ; FI=1.485
Citeaza: M. Buliga, *Energy Minimizing Brittle Crack Propagation*, **J. of Elasticity vol. 52(3)** (1999), pag. 201 – 238

12. A. Mielke, R. Rossi, G. Savaré, Modeling solutions with jumps for rate-independent systems on metric spaces, **Discrete Contin. Dyn. Syst. A 25** (2009), 585–615 ; FI=0.913
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Existence and construction of bipotentials for graphs of multivalued laws*, **J. of Convex Analysis vol. 15(1)** (2008), pag. 87 – 104

13. A. Mielke, R. Rossi, G. Savaré, BV solutions and viscosity approximations of rate-independent systems, **ESAIM: Control, Optimisation and Calculus of Variations 18(1)** (2012), 36–80 ; FI=0.758
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Existence and construction of bipotentials for graphs of multivalued laws*, **J. of Convex Analysis vol. 15(1)** (2008), pag. 87 – 104

14. A. Berga, Mathematical and numerical modeling of the non-associated plasticity of soilsPart 1: The boundary value problem, **International Journal of Non-Linear Mechanics 47(1)** (2012), 26–35 ; FI=1.209
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Existence and construction of bipotentials for graphs of multivalued laws*, **J. of Convex Analysis vol. 15(1)** (2008), pag. 87 – 104

15. A. Visintin, Variational formulation and structural stability of monotone equations, **Calculus of Variations and Partial Differential Equations** (2012), DOI: 10.1007/s00526-012-0519-y ; FI=1.235
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Existence and construction of bipotentials for graphs of multivalued laws*, **J. of Convex Analysis vol. 15(1)** (2008), pag. 87 – 104

16. A. Visintin, Structural stability of rate-independent nonpotential flows, **Discrete Contin. Dyn. Syst. S 6(1)** (2013), 257 - 275; FI=1.180
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Existence and construction of bipotentials for graphs of multivalued laws*, **J. of Convex Analysis vol. 15(1)** (2008), pag. 87 – 104

17. A. Berga, Mathematical and numerical modeling of the non-associated plasticity of soilsPart 2: Finite element analysis, **International Journal of Non-Linear Mechanics 47(1)** (2012), 36–45 ; FI=1.209
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Existence and construction of bipotentials for graphs of multivalued laws*, **J. of Convex Analysis vol. 15(1)** (2008), pag. 87 – 104

18. C. Vallée, C. Lerintiu, D. Fortuné, K. Atchonouglo, M. Ban, Representing a non-associated constitutive law by a bipotential issued from a Fitzpatrick sequence, **Archives of Mechanics 61(3-4)** (2009), 325–340 ; FI=0.396
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Existence and construction of bipotentials for graphs of multivalued laws*, **J. of Convex Analysis vol. 15(1)** (2008), pag. 87 – 104

19. C. Vallée, C. Lerintiu, J. Chaoufi, D. Fortuné, M. Ban, K. Atchonouglo, A Class of Non-associated Materials: n-Monotone MaterialsHookes Law of Elasticity Revisited, **J. Elasticity** (2012), doi: 10.1007/s10659-012-9403-4 ; FI=1.110
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Existence and construction of bipotentials for graphs of multivalued laws*, **J. of Convex Analysis vol. 15(1)** (2008), pag. 87 – 104

20. G. de Saxcé, C. Vallée, Bargmann group, momentum tensor and Galilean invariance of ClausiusDuhem inequality, **International Journal of Engineering Science 50(1)** (2012),216 – 232 ; FI=1.210
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Existence and construction of bipotentials for graphs of multivalued laws*, **J. of Convex Analysis vol. 15(1)** (2008), pag. 87 – 104

21. J.-P. Penot, Positive sets, conservative sets and dissipative sets, **J. of Convex Analysis vol. 16(3-4)** (2009), pag. 973 – 986 ; FI = 0.823
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Existence and construction of bipotentials for graphs of multivalued laws*, **J. of Convex Analysis vol. 15(1)** (2008), pag. 87 – 104

22. A. Matei, C.P. Niculescu, Weak solutions via bipotentials in mechanics of deformable solids, **Journal of Mathematical Analysis and Applications 379(1)** (2011),15 – 25 ; FI=1.001
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Non Maximal Cyclically Monotone Graphs and Construction of a Bipotential for the Coulomb's Dry Friction Law*, **J. of Convex Analysis vol. 17(1)** (2010), pag. 81 – 94;

23. A. Berga, Mathematical and numerical modeling of the non-associated plasticity of soilsPart 1: The boundary value problem, **International Journal of Non-Linear Mechanics 47(1)** (2012), 26–35 ; FI=1.209
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Non Maximal Cyclically Monotone Graphs and Construction of a Bipotential for the Coulomb's Dry Friction Law*, **J. of Convex Analysis vol. 17(1)** (2010), pag. 81 – 94;

24. A. Matei, A variational approach via bipotentials for unilateral contact problems, **Journal of Mathematical Analysis and Applications 397(1)** (2013), 371 – 380 ; FI=1.001

Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Non Maximal Cyclically Monotone Graphs and Construction of a Bipotential for the Coulomb's Dry Friction Law*, **J. of Convex Analysis vol. 17(1)** (2010), pag. 81 – 94;

25. El Hadji Bouya Amar, D. Clamond, N. Fraysse, and J. Rajchenbach, Response of a noncohesive packing of grains to a localized force: Deviation from continuum elasticity, **Phys. Rev. E 83, 021304** (2011) ; FI=2.255
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Non Maximal Cyclically Monotone Graphs and Construction of a Bipotential for the Coulomb's Dry Friction Law*, **J. of Convex Analysis vol. 17(1)** (2010), pag. 81 – 94;

26. C. Vallée, C. Lerintiu, J. Chaoufi, D. Fortuné, M. Ban, K. Atchonouglo, A Class of Non-associated Materials: n-Monotone MaterialsHookes Law of Elasticity Revisited, **J. Elasticity** (2012), doi: 10.1007/s10659-012-9403-4 ; FI=1.110
Citeaza: M. Buliga, G. de Saxcé, C. Vallée, *Non Maximal Cyclically Monotone Graphs and Construction of a Bipotential for the Coulomb's Dry Friction Law*, **J. of Convex Analysis vol. 17(1)** (2010), pag. 81 – 94;

27. A. Matei, C.P. Niculescu, Weak solutions via bipotentials in mechanics of deformable solids, **Journal of Mathematical Analysis and Applications 379(1)** (2011),15 – 25 ; FI=1.001
Citeaza: M. Buliga, G. de Saxcé, C. Vallée: *Bipotentials for Non-monotone Multivalued Operators: Fundamental Results and Applications*, **Acta Appl. Math. vol. 110(2)** (2010), pag. 955 – 972

28. A. Visintin, Variational formulation and structural stability of monotone equations, **Calculus of Variations and Partial Differential Equations** (2012), DOI: 10.1007/s00526-012-0519-y ; FI=1.235
Citeaza: M. Buliga, G. de Saxcé, C. Vallée: *Bipotentials for Non-monotone Multivalued Operators: Fundamental Results and Applications*, **Acta Appl. Math. vol. 110(2)** (2010), pag. 955 – 972

29. A. Matei, A variational approach via bipotentials for unilateral contact problems, **Journal of Mathematical Analysis and Applications 397(1)** (2013), 371 – 380 ; FI=1.001
Citeaza: M. Buliga, G. de Saxcé, C. Vallée: *Bipotentials for Non-monotone Multivalued Operators: Fundamental Results and Applications*, **Acta Appl. Math. vol. 110(2)** (2010), pag. 955 – 972

30. A. Berga, Mathematical and numerical modeling of the non-associated plasticity of soilsPart 1: The boundary value problem, **International Journal of Non-Linear Mechanics 47(1)** (2012), 26–35 ; FI=1.209
Citeaza: M. Buliga, G. de Saxcé, C. Vallée: *Bipotentials for Non-monotone Multivalued Operators: Fundamental Results and Applications*, **Acta Appl. Math. vol. 110(2)** (2010), pag. 955 – 972

31. C. Vallée, C. Lerintiu, J. Chaoufi, D. Fortuné, M. Ban, K. Atchonouglo, A Class of Non-associated Materials: n-Monotone MaterialsHookes Law of Elasticity Revisited, **J. Elasticity** (2012), doi: 10.1007/s10659-012-9403-4 ; FI=1.110
Citeaza: M. Buliga, G. de Saxcé, C. Vallée: *Bipotentials for Non-monotone Multivalued*

Operators: Fundamental Results and Applications, **Acta Appl. Math. vol. 110(2)** (2010), pag. 955 – 972

32. I.M. Bomze, Copositive optimization Recent developments and applications, **European Journal of Operational Research 216(3)** (2011), 509 – 520 ; FI=1.815
Citeaza: M. Buliga: *Four applications of majorization to convexity in the calculus of variations*, **Linear Algebra Appl. vol. 429(7)** (2008), pag. 1528 – 1545

33. I.M. Bomze, W. Schachinger, G. Uchida, Think co(mpletely)positive ! Matrix properties, examples and a clustered bibliography on copositive optimization, **Journal of Global Optimization 52(3)** (2012), 423 – 445 ; FI=1.196
Citeaza: M. Buliga: *Four applications of majorization to convexity in the calculus of variations*, **Linear Algebra Appl. vol. 429(7)** (2008), pag. 1528 – 1545

34. A. Armandnejad, F. Akbarzadeh, Z. Mohammadi, Zbl pre06044840 Armandnejad, A.; Akbarzadeh, F.; Mohammadi, Z. Row and column-majorization on $M_{n,m}$, **Linear Algebra Appl. vol. 437(3)** (2012), 1025 – 1032 ; FI = 0.974
Citeaza: M. Buliga: *Four applications of majorization to convexity in the calculus of variations*, **Linear Algebra Appl. vol. 429(7)** (2008), pag. 1528 – 1545

35. A. Berga, Mathematical and numerical modeling of the non-associated plasticity of soilsPart 1: The boundary value problem, **International Journal of Non-Linear Mechanics 47(1)** (2012), 26–35 ; FI=1.209
Citeaza:M. Buliga, G. de Saxcé, C. Vallée: *Blurred Constitutive Laws and Bipotential Convex Covers*, **Math. Mech. Solids vol. 16(2)** (2011), pag. 161 – 171

36. C. Vallée, C. Lerintiu, J. Chaoufi, D. Fortuné, M. Ban, K. Atchonouglo, A Class of Non-associated Materials: n-Monotone MaterialsHookes Law of Elasticity Revisited, **J. Elasticity** (2012), doi: 10.1007/s10659-012-9403-4 ; FI=1.110
Citeaza: M. Buliga, G. de Saxcé, C. Vallée: *A variational formulation for constitutive laws described by bipotentials*, **Math. Mech. Solids doi: 10.1177/1081286511436136** (2012)

37. J.A. Miszczak, Z. Puchała, P. Horodecki, Sub- and super-fidelity as bounds for quantum fidelity, **Quantum Information & Computation 9(1)** (2009), 103 – 130 ; FI=1.66
Citeaza: M. Buliga: *Majorisation with applications to the calculus of variations*, **arXiv:math/0105044 [math.FA]** (2001)

38. A. Mainik, A. Mielke, Global Existence for Rate-Independent Gradient Plasticity at Finite Strain, **Journal of Nonlinear Science 19(3)** (2009), 221 –248 ; FI=1.149
textitCiteaza: M. Buliga, *Lower semi-continuity of integrals with G-quasiconvex potential*, **Z. Angew. Math. Phys. 53(6)** (2002), 949 – 961

39. A. Kaplan, F. Levstein, L. Saal, A. Tiraboschi, Horizontal submanifolds of groups of Heisenberg type, **Ann. Mat. Pura Appl. (4) 187** (2008), no. 1, 67 – 91 ; FI=0.838
textitCiteaza: M. Buliga, *Symplectic, Hofer and sub-Riemannian geometry*, **arxiv:math.SG/0201107** (2002)

40. A. Constantinescu, A. Oueslati, On the reconstruction of residual stresses after matter removal in rods, **Comptes Rendus Mcanique 336(1-2)** (2008), 69 – 78; FI=0.799

Citeaza: P. Ballard, M. Buliga, A. Constantinescu, *Reconstruction d'un champ de contraintes résiduelles à partir des contraintes mesurées sur des surfaces successives. Existence et unicité*, **Comptes rendus de l'Académie des sciences. Série II, Mécanique, physique, chimie, astronomie. 319(10)** (1994), pag. 1117 -1122