

Listă de Lucrări

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1. Open Access. Open Science.

- arXiv articles: https://arxiv.org/a/buliga_m_1.html
- GitHub repositories and articles:
 - Chemlambda <https://github.com/chorasimilarity/chemlambda-gui>
 - Project Hapax <https://github.com/mbuliga/hapax>
 - Quine Graphs <https://github.com/mbuliga/quinegraphs>
- Figshare articles and data repositories: http://figshare.com/authors/Marius_Buliga/475484

2. Articles.

1. M. Buliga, Quine Graphs, GitHub (2019), <https://github.com/mbuliga/quinegraphs>
2. M. Buliga, Project Hapax, Github (2019), <https://github.com/mbuliga/hapax>
3. M. Buliga, On the information content of the difference from hamiltonian evolution arXiv:1902.04598
4. M. Buliga, A stochastic version and a Liouville theorem for hamiltonian inclusions with convex dissipation arXiv:1807.10480
5. M. Buliga, The em-convex rewrite system arXiv:1807.02058
6. M. Buliga, Chemlambda strings. Figshare. (2018), doi:10.6084/m9.figshare.5751318.v1
7. M. Buliga, G. de Saxcé, A symplectic Brezis-Ekeland-Nayroles principle, Mathematics and Mechanics of Solids **22**(2017) no. 6, 1288-1302, arXiv:1408.3102
8. M. Buliga, The chemlambda collection of simulations, Figshare (2017), doi:10.6084/m9.figshare.4747390.v1

9. M. Buliga, The library of chemlambda molecules (2016), GitHub (2016)
<https://github.com/chorasimilarity/chemlambda-gui/tree/gh-pages/dynamic/mol>
10. M. Buliga, Molecular computers, GitHub (2015), href<https://arxiv.org/abs/1811.04960>arXiv:1811.04960
<http://chorasimilarity.github.io/chemlambda-gui/dynamic/molecular.html>
11. M. Buliga, Turing machines, chemlambda style, GitHub (2015)
<http://chorasimilarity.github.io/chemlambda-gui/dynamic/turingchem.html>
12. M. Buliga, Build a molecular computer. Journal of Brief Ideas, Zenodo (2015) doi:10.5281/zenodo.16018
13. M. Buliga, Zipper logic, Figshare (2014), doi:10.6084/m9.figshare.1032660
14. M. Buliga, L.H. Kauffman, Chemlambda, universality and self-multiplication, Artificial Life 14, Complex Adaptive Systems, MIT Press 2014, 490–497, arXiv:1403.8046
15. M. Buliga, L.H. Kauffman, GLC actors, artificial chemical connectomes, topological issues and knots, arXiv:1312.4333
16. M. Buliga, Chemical concrete machine, arXiv:1309.6914, Figshare (2013) doi:10.6084/m9.figshare.830457
17. M. Buliga, Sub-riemannian geometry from intrinsic viewpoint, arXiv:1206.309
18. M. Buliga, Graphic lambda calculus, Complex Systems 22, 4 (2013), 311-360, arXiv:1305.5786
19. M. Buliga, 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, arXiv:1110.6598
20. M. Buliga, 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 , (pdf)
21. M. Buliga, 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
22. M. Buliga, Infinitesimal affine geometry of metric spaces endowed with a dilatation structure, Houston Journal of Mathematics, **36** 1 (2010), 91-136, arXiv:0804.0135
23. M. Buliga, 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
24. M. Buliga, Emergent algebras, arXiv:0907.1520
25. M. Buliga, G. de Saxcé, C. Vallée, Blurred maximal cyclically monotone sets and bipotentials, Analysis and Applications 8 (2010), no. 4, 1-14, arXiv:0905.0068
26. M. Buliga, G. de Saxcé, C. Vallée, Blurred constitutive laws and bipotential convex covers, Mathematics and Mechanics of Solids, **16**(2), (2011), 161-171 , arXiv:0905.0067
27. 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, **17** (2010), No. 1, 81-94, arXiv:0802.1140
28. M. Buliga, G. de Saxcé, C. Vallée, Bipotentials for non monotone multivalued operators: fundamental results and applications, Acta Applicandae Mathematicae, 110, 2(2010), 955-972, arXiv:0804.1863
29. M. Buliga, 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

30. M. Buliga, Four applications of majorization to convexity in the calculus of variations, *Linear Algebra and its Appl.*, **429**, (2008), 1528-1545, (arXiv:math.FA/0105044)
31. M. Buliga, 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
32. M. Buliga, G. de Saxcé, C. Vallée, Existence and construction of bipotentials for graphs of multivalued laws, *J. of Convex Analysis*, **15**, 1, (2008) , 087–104, arXiv:math/0608424
33. M. Buliga, Dilatation structures I. Fundamentals, *J. Gen. Lie Theory Appl.*, **1** (2007), No 2, 65-95, arXiv:math/0608536
34. M. Buliga, Lower semi-continuity of integrals with G -quasiconvex potential, *Z. Angew. Math. Phys.*, **53**, 6, 949-961, (2002), arXiv:math/0105097
35. M. Buliga, Brittle crack propagation based on an optimal energy balance, *Rev. Roum. des Math. Pures et Appl.*, **45**, no. 2, 201–209 (2001), (ps)
36. M. Buliga, Geometric evolution problems and action-measures, *PAMM Appl. Math. Bull.*, vol. **LXXXVI** (1998), T. U. Budapest, 53-58,
37. M. Buliga, Energy Minimizing Brittle Crack Propagation, *J. of Elasticity*, **52**, 3, 201-238, (1998) , (pdf)
38. M. Buliga, On Special Relativistic Approach to Large Deformations in Continuous Media, *Rev. Roum. de Math. Pures et Appl.*, t. XLI, **1-2**, 5-15, (1996)
39. M. Buliga, 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)
40. M. Buliga, Topological Substratum of the Derivative, *Mathematical Reports*, 45, **6**, 453-465, (1993)
41. M. Buliga, 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,
42. M. Buliga, 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,
43. M. Buliga, 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
44. M. Buliga, 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
45. M. Buliga, Sub-Riemannian geometry and Lie groups. Part I, (2002), arXiv:math.MG/0210189
46. M. Buliga, Symplectic, Hofer and sub-Riemannian geometry, (2002), arXiv:math.SG/0201107,
47. M. Buliga, Normed groupoids with dilations arXiv:1107.2823
48. M. Buliga, Contractible groups and linear dilatation structures (2007) arXiv:0705.1440
49. Vrănceanu' nonholonomic spaces from the viewpoint of distance geometry, (in romanian, original title: Spațiile neolonome ale lui Vrănceanu din punctul de vedere al geometriei distanței), *Gazeta Matematica A*, **4** (2008), 349-352

50. M. Buliga, Origin of emergent algebras, arXiv:1304.3694
51. M. Buliga, Geometric Ruzsa triangle inequality in metric spaces with dilations, arXiv:1304.3358
52. M. Buliga, On graphic lambda calculus and the dual of the graphic beta move, arXiv:1302.0778
53. M. Buliga, Graphic lambda calculus and knot diagrams , arXiv:1211.1604
54. M. Buliga, Local and global moves on locally planar trivalent graphs, lambda calculus and -Scale , arXiv:1207.0332
55. M. Buliga, Local and global moves on locally planar trivalent graphs, lambda calculus and -Scale , arXiv:1207.0332
56. M. Buliga, -Scale, a lambda calculus for spaces with dilations , arXiv:1205.0139
57. M. Buliga, Computing with space: a tangle formalism for chora and difference, arXiv:1103.6007
58. M. Buliga, More than discrete or continuous: a bird's view , arXiv:1011.4485
59. M. Buliga, Boring mathematics, artistes pompiers and impressionists, arXiv:1011.3465 (articol de opinie, comentat pe net)
60. M. Buliga, What is a space? Computations in emergent algebras and the front end visual system , arXiv:1009.5028
61. M. Buliga, Introduction to metric spaces with dilations, arXiv:1007.2362
62. M. Buliga, Uniform refinements, topological derivative and a differentiation theorem in metric spaces, arXiv:0911.4619
63. M. Buliga, On the Kirchheim-Magnani counterexample to metric differentiability, arXiv:0710.1350
64. M. Buliga, Microfractured media with a scale and Mumford-Shah energies, arXiv:0704.3791
65. M. Buliga, Dilatation structures II. Linearity, self-similarity and the Cantor set, arXiv:math/0612509
66. M. Buliga, The variational complex of a diffeomorphisms group , arXiv:math/0511302
67. M. Buliga, Perturbed area functionals and brittle damage mechanics , arXiv:math/0511240
68. Quasiconvexity versus group invariance , arXiv:math/0511235
69. M. Buliga, Sub-Riemannian geometry and Lie groups. Part II. Curvature of metric spaces, coadjoint orbits and associated representations , arXiv:math/0407099
70. M. Buliga, Curvature of sub-Riemannian spaces , arXiv:math/0311482
71. M. Buliga, Tangent bundles to sub-Riemannian groups , arXiv:math/0307342

Mémoire pour l'Habilitation à diriger des recherches, Sciences Mathématiques

- M. Buliga, Outils géométriques dans l'étude des grandes déformations, de l'endommagement et de la mécanique non régulière, (2007), Université des Sciences et Technologies de Lille (Lille I), pdf.

PhD Thesis, Mathematics

- Variational Formulations in brittle fracture mechanics (in Romanian), PhD Thesis, (1997), Institute of Mathematics of the Romanian Academy

Other preprints or notes

1. *Lower semicontinuity of variational integrals defined on groups of diffeomorphisms*, IMAR preprint 17/1998
2. *Modélisation de la décohésion d'interface fibres-matrice dans les matériaux composites*, mémoire de D.E.A., École Polytechnique, 1995
3. *Energetic criteria in fracture mechanics*, scientific report, grant MCT-ANSTI 627/1998-1999