PUBLICATIONS

Laurenţiu Leuştean

Contents

1 Books

1. *Representations of many-valued algebras*, Editura Universitară, Bucharest, 2010, 130pp.

2 Book Chapters

1. *An application of proof mining to the proximal point algorithm in CAT(0) spaces* (with A. Sipoş)
   in: A. Bellow, C. Calude, T. Zamfirescu (Editors), Mathematics Almost Everywhere. In Memory of Solomon Marcus, World Scientific, 2018, 153-168.

2. *Nonexpansive iterations in uniformly convex W-hyperbolic spaces*,
   in: A. Leizarowitz, B. S. Mordukhovich, I. Shafrir, A. Zaslavski (Editors), Nonlinear Analysis and Optimization I: Nonlinear Analysis, Contemporary Mathematics, Vol. 513 (2010), AMS, 193-209.

3 Journal Papers

1. *Rates of (T-)asymptotic regularity of the generalized Krasnoselskii-Mann-type iteration* (with P. Firmino),
   arXiv:2501.09523 [math.OC] (2025) (accepted for publication in Portugalia Mathematicae)

2. *Linear rates of asymptotic regularity for Halpern-type iterations* (with H. Cheval),
   Mathematics of Computation, Vol. 94 (2025), 1323-1333.

3. *Quantitative asymptotic regularity of the VAM iteration with error terms for m-accretive operators in Banach spaces* (with P. Firmino),
   Zeitschrift für Analysis und ihre Anwendungen (2024),
   DOI: https://doi.org/10.4171/ZAA/1772

4. *Rates of asymptotic regularity for the alternating Halpern-Mann iteration* (with P. Pinto),
   Optimization Letters, Vol. 18 (2024), 529–543.

5. *On modified Halpern and Tikhonov-Mann iterations* (with H. Cheval and U. Kohlenbach),
   Journal of Optimization Theory and Applications, Vol. 197 (2023), 233–251.

6. *Quadratic rates of asymptotic regularity for the Tikhonov-Mann iteration* (with H. Cheval),
   Optimization Methods and Software, Vol. 37 (2022), No. 6, 2225–2240.

7. *Quantitative results on a Halpern-type proximal point algorithm* (with P. Pinto),
   Computational Optimization and Applications, Vol. 79 (2021), 101–125.

8. *On the removal of weak compactness arguments in proof mining* (with F. Ferreira and P. Pinto)
   Advances in Mathematics, Vol. 354 (2019), 106728, 55p.

9. *Effective strong convergence of the proximal point algorithm in CAT(0) spaces* (with A. Sipoş),
   Journal of Nonlinear and Variational Analysis, Vol. 2 (2018), No. 2, 219–228.
   Special Issue dedicated to Simeon Reich.

10. *An abstract proximal point algorithm* (with A. Nicolae and A. Sipoş),
    Journal of Global Optimization, Vol. 72 (2018), No. 3, 553-577.

11. *Quantitative results on Fejér monotone sequences* (with U. Kohlenbach and A. Nicolae),
    Communications in Contemporary Mathematics, Vol. 20 (2018), 1750015 [42 pages].

12. *A note on an alternative iterative method for nonexpansive mappings* (with A. Nicolae),
Journal of Convex Analysis, Vol. 24 (2017), No. 2, 501-503.

13. *Quantitative results on the Ishikawa iteration of Lipschitz pseudo-contractions* (with V. Radu and A. Sipoş),
Journal of Nonlinear and Convex Analysis, Vol. 17 (2016), No. 11, 2277-2292.

14. *Effective results on nonlinear ergodic averages in CAT(k) spaces* (with A. Nicolae),
Ergodic Theory and Dynamical Systems, Vol. 36 (2016), No. 8, 2580-2601.

15. *A note on an ergodic theorem in weakly uniformly convex geodesic spaces* (with A. Nicolae),
Archiv der Mathematik, Vol. 105 (2015), No. 5, 467-477.

16. *A rate of asymptotic regularity for the Mann iteration of κ-strict pseudo-contractions* (with D. Ivan),
Numerical Functional Analysis and Optimization, Vol. 36 (2015), No. 6, 792-798.

17. *Firmly nonexpansive mappings in classes of geodesic spaces* (with D. Ariza-Ruiz and G. López-Acedo),
Transactions of the American Mathematical Society, Vol. 366 (2014), 4299-4322.

18. *An application of proof mining to nonlinear iterations*,
Annals of Pure and Applied Logic, Vol. 165 (2014), No.9, 1484-1500.

19. *Effective results on compositions of nonexpansive mappings* (with A. Nicolae),
Journal of Mathematical Analysis and Applications, Vol. 410 (2014), No. 2, 902-907.

20. *Effective metastability of Halpern iterates in CAT(0) spaces* (with U. Kohlenbach),
Advances in Mathematics, Vol. 231 (2012), No. 5, 2526-2556.
Addendum in Advances in Mathematics, Vol. 250 (2014), 650-651.

21. *On the computational content of convergence proofs via Banach limits* (with U. Kohlenbach),
Philosophical Transactions of the Royal Society A, Vol. 370 (2012), No. 1971, 3449–3463,
Theme Issue *The foundations of computation, physics and mentality: the Turing legacy.*

22. *Alternative iterative methods for nonexpansive mappings, rates of convergence and application* (with V. Colao, G. López-Acedo and V. Martin-Marquez),
Journal of Convex Analysis, Vol. 18 (2011), No. 2, 465–487.

23. *Asymptotically nonexpansive mappings in uniformly convex hyperbolic spaces* (with U. Kohlenbach),
Journal of the European Mathematical Society, Vol. 12 (2010), No. 1, 71-92.

24. *Maximal residuated lattices with lifting Boolean center* (with G. Geor-gescu and C. Mureşan),
    Algebra Universalis, Vol. 63 (2010), No. 1, 83-99.

25. *A quantitative Mean Ergodic Theorem for uniformly convex Banach spaces* (with U. Kohlenbach),
    Ergodic Theory and Dynamical Systems, Vol. 29 (2009), No. 6, 1907-1915.

26. *Rates of asymptotic regularity for Halpern iterations of nonexpansive mappings*,
    Journal of Universal Computer Science, Vol. 13 (2007), No. 11, 1680-1691;
    in C.S. Calude, G. Stefănescu, and M. Zimand (Editors): Combinatorics and Related Areas. A Collection of Papers in Honor of the 65th Birthday of Ioan Tomescu.

27. *The approximate fixed point property in product spaces* (with U. Kohlenbach),
    Nonlinear Analysis Series A: Theory, Methods & Applications, Vol. 66 (2007), No. 4, 806-818.

28. *A quadratic rate of asymptotic regularity in CAT(0)-spaces*,
    Journal of Mathematical Analysis and Applications, Vol. 325 (2007), No. 1, 386-399.

29. *Baer extensions of BL-algebras*,
    Journal of Multiple-Valued Logic and Soft Computing, Vol. 12 (2006), No. 3-4, 321-336.

30. *Sheaf representations of BL-algebras*,
    Soft Computing - A Fusion of Foundations, Methodologies and Applications, Vol. 9, No. 12 (2005), Special issue on BL-algebras, 897-909.

31. *Pseudo-hoops* (with G. Georgescu and V. Preoteasa),
    Journal of Multiple-Valued Logic and Soft Computing, Vol. 11 (2005), No. 1-2, 153-184.

32. *Compact representations of BL-algebras* (with A. Di Nola),
    Archive for Mathematical Logic, Vol. 42 (2003), No. 8, 737 - 761.

33. *Mann iterates of directionally nonexpansive mappings in hyperbolic spa-ces* (with U. Kohlenbach),
    Abstract and Applied Analysis, Vol. 2003 (2003), 449-477.

34. *The prime and maximal spectra and the reticulation of BL-algebras*,
    Central European Journal of Mathematics, Vol. 1 (2003), No. 3, 382-397.

35. *Canonical models and filtrations in three-valued propositional modal logic*,
    Journal of Multiple-Valued Logic, Vol. 8 (2002), No. 1-2, 577-590.

36. *Some classes of pseudo-BL algebras* (with G. Georgescu),
    Journal of Australian Mathematical Society, Vol. 73 (2002), No. 1, 127-153.

37. *Boolean products of BL-algebras* (with A. Di Nola and G. Georgescu),
    Journal of Mathematical Analysis and Applications, Vol. 251 (2000), No. 1, 106-131.

4 Conference, Workshop Papers

1. *Proof mining in $\mathbb{R}$-trees and hyperbolic spaces*,
   Electronic Notes in Theoretical Computer Science, Vol. 165 (2006), Elsevier, 95-106;
   in G. Mints and R. de Queiroz (Editors): Proceedings of the 13th Workshop on Logic,
   Language, Information and Computation (WOLLIC 2006), Stanford University, CA,
   USA, 18-21 July 2006.

2. *Certifying optimality of state estimation programs* (with G. Roşu, R. Prasad Venkatesan and J. Whittle),
   Lecture Notes in Computer Science, Vol. 2725 (2003), Springer, 301-314;
   in W. A. Hunt Jr., F. Somenzi (Editors): Computer Aided Verification (CAV), Proceedings of the 15th International Conference, Boulder, CO, USA, 8-12 July 2003,
   Proceedings.

5 Technical Reports and Preprints

1. *Barycenters in uniformly convex geodesic spaces* (with A. Nicolae and A. Zaharescu),
   arXiv:1609.02589 [math.MG] (2016).

2. *Proof mining in fixed point theory and ergodic theory*,
   Oberwolfach Preprints OWP 2009-05, Mathematisches Forschungsinstitut Oberwolfach, Germany, 71pp (2009).

3. *Certifying Kalman Filters* (with G. Roşu),
   RIACS Technical Report TR.03.02, Research Institute for Advanced Computer Science (RIACS), NASA Ames Research Center, Moffet Field, CA, USA, 53pp (2003).

6 Published abstracts

1. *Proof mining and asymptotic regularity* (with P. Firmino),
   2024 European Summer Meeting of the Association for Symbolic Logic, Logic Colloquium 2024, June 24-28, 2024, University of Gothenburg;
   Bulletin of Symbolic Logic, Vol. 30 (2024), No. 4, 600.

2. *Proof mining and the viscosity approximation method* (with P. Pinto),
   2023 European Summer Meeting of the Association for Symbolic Logic, Logic Colloquium 2023, June 5-9, 2023, University of Milan;

Bulletin of Symbolic Logic 2024, Vol. 30 (2024), No. 1, 124.

3. *Proof mining and asymptotic regularity* (with H. Cheval, P. Firmino, U. Kohlenbach and P. Pinto),
Workshop 2346 Mathematical Logic: Proof Theory, Constructive Mathematics, November 12-17, 2023, Mathematisches Forschungsinstitut Oberwolfach;
Oberwolfach Report 53 (2023), 18-21;
DOI: 10.4171/OWR/2023/53.

4. *Proof theoretic methods in nonlinear analysis III. Quantitative results on Féjer monotone sequences* (with U. Kohlenbach and A. Nicolae),
Workshop Mathematical Logic: Proof Theory, Constructive Mathematics, November 16-22, 2014, Mathematisches Forschungsinstitut Oberwolfach;
Oberwolfach Report Vol. 52 (2014), 28-29.

5. *Recent developments in proof mining* (with U. Kohlenbach),
Workshop Mathematical Logic: Proof Theory, Constructive Mathematics, November 6-12, 2011, Mathematisches Forschungsinstitut Oberwolfach;
Oberwolfach Report Vol. 52 (2011), 20-22.

6. *Recent results in proof mining* (with U. Kohlenbach),
Workshop Mathematical Logic: Proof Theory, Constructive Mathematics, April 6-12, 2008, Mathematisches Forschungsinstitut Oberwolfach;
Oberwolfach Reports, Vol. 5, No. 2, European Mathematical Society Publishing House, 2008, 930-931.

7. *Proof mining in CAT(0)-spaces and $\mathbb{R}$-trees*,
Abstracts of Papers presented to the American Mathematical Society, Volume 28, No. 1, Issue 147, AMS, 2007, 16.

8. *Approximate fixed points of nonexpansive functions in product spaces* (with U. Kohlenbach),
Mathematics, Algorithms, Proofs, January 9-14, 2005, Schloss Dagstuhl-Leibniz-Zentrum für Informatik;
Dagstuhl Seminar Proceedings, Vol. 5021 (2006), 1-8;
DOI:10.4230/DagSemProc.05021.6.

9. *Approximate fixed point property in product spaces* (with U. Kohlenbach),
Workshop Mathematical Logic: Proof Theory, Type Theory and Constructive Mathematics, March 20-26, 2005, Mathematisches Forschungsinstitut Oberwolfach;
Oberwolfach Reports, Vol. 2, No. 1, European Mathematical Society Publishing House, 2005, 795-797.

7 Editing

1. Editor (together with M. Marin) of: Proceedings of the 8th Symposium on Working Formal Methods (FROM 2024), EPTCS 410, 10.4204/EPTCS.410 (2024).

2. Editor (together with H. Cheval and A. Sipoş) of: Proceedings of the 7th Symposium on Working Formal Methods (FROM 2023), EPTCS 389, DOI: 10.4204/EPTCS.389 (2023).

3. Guest editor (together with J. Kleijn and D. Lucanu) of: Special Issue on The Working Formal Methods Symposium (FROM 2018), Fundamenta Informaticae, Vol. 173 (2020), No. 2-3.