



Lista de lucrări

Ion Necoară

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Teza de doctorat

1. **I. Necoara**, *Model predictive control for piecewise affine and max-plus-linear systems*, Technical University Delft, The Netherlands, 2006 (*Cum Laude*).

Cărți și capitole de cărți

1. **I. Necoara**, *Model Predictive Control for Hybrid Systems: Piecewise Affine and Max-Plus-Linear Systems*, VDM Verlag, ISBN: 978-363-909-312-4, 2008.
2. **I. Necoara**, *Coordinate gradient descent methods*, chapter in “Big Data and Computational Intelligence in Networking”, Y. Wu et al. (Eds.), Taylor & Francis LLC - CRC Press, 2017 (ISBN: 978-149-878-4863).
3. **I. Necoara**, A. Patrascu, A. Nedich, *Complexity Certifications of First-Order Inexact Lagrangian Methods for General Convex Programming: Application to Real-Time MPC*, chapter in “Developments in Model-Based Optimization and Control”, S. Oлару et al. (Eds.), Lecture Notes in Control and Information Sciences, vol. 464, Springer, 2015 (ISBN: 978-3-319-26685-5).
4. N. Nguyen, S. Oлару, P. Rodriguez-Ayerbe, M. Hovd, **I. Necoara**, *Fully inverse parametric linear/quadratic programming problems via convex liftings*, chapter in “Developments in Model-Based Optimization and Control”, S. Oлару et al. (Eds.), Lecture Notes in Control and Information Sciences, vol. 464, Springer, 2015 (ISBN: 978-3-319-26685-5).
5. I. Dumitrache, **I. Necoara**, S. Caramihai, *Hybrid Systems*, in “Automatica”, vol. II, I. Dumitrache (Eds.), Romanian Academy Publishing, 2013 (ISBN: 978-973-27-2298-5).
6. **I. Necoara**, *Rate analysis of inexact dual fast gradient method for distributed MPC*, chapter in “Distributed MPC made easy”, J. Maestre et al. (Eds.), Intelligent Systems, Control and Automation: Science & Engineering, vol. 69, Springer, 2013 (ISBN: 978-94-007-7005-8).
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8. **I. Necoara**, *Distributed control over networks using smoothing techniques*, chapter in “Artificial Neural Networks”, C. Alippi et al. (Eds.), Lecture Notes in Computer Science, vol. 5769, Springer, 2009 (ISBN: 978-364-204-273-7).

Articole publicate în reviste ISI cu factor de impact¹

1. **I. Necoara**, O. Ferqoc, *Linear convergence of dual coordinate descent on non-polyhedral convex problems*, partially accepted in *Mathematics of Operations Research*, 2020 (Q1 if/ais - Applied Mathematics).
2. T. Ionescu, O. Iftime, **I. Necoara**, *Model reduction with pole-zero placement and high order moment matching*, partially accepted in *Automatica*, 2020 (Q1 if/ais - Automation & Control Systems).
3. **I. Necoara**, A. Nedich, *Minibatch stochastic subgradient-based projection algorithms for solving convex inequalities*, partially accepted in *Computational Optimization and Applications*, 2020 (Q1 if/ais - Applied Mathematics).
4. **I. Necoara**, *General convergence analysis of stochastic first order methods for composite optimization*, *Journal of Optimization Theory and Applications*, doi: 10.1007/s10957-021-01821-2, 2021 (Q2 if/ais - Applied Mathematics).
5. **I. Necoara**, M. Takac, *Randomized sketch descent methods for non-separable linearly constrained optimization*, *IMA Journal of Numerical Analysis*, doi:10.1093/imanum/draa018, 2020 (Q1 if/ais - Applied Mathematics).
6. T. Sun, **I. Necoara**, Q. Tran-Dinh, *Composite Convex Optimization with Global and Local Inexact Oracles*, *Computational Optimization and Applications*, vol. 76, nr. 1, pp. 69–124, 2020 (Q1 if/ais - Applied Mathematics).
7. **I. Necoara**, T. Ionescu, *H2 model reduction of linear network systems by moment matching and optimization*, *IEEE Transactions on Automatic Control*, vol. 65, nr. 12, 2020, (DOI: 10.1109/TAC.2020.2972227, ISSN: 0018-9286, Q1 if/ais - Automation & Control Systems).
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¹ Conform Uefiscdi - 2019: 29 Q1 si 9 Q2 clasificate pe baza AIS.

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Articole publicate în conferințe internaționale

1. D. Lupu, **I. Necoara**, *Local linear convergence of stochastic higher-order methods for convex optimization*, in Proceedings of European Control Conference 2021.
2. L. Ghinea, **I. Necoara**, M. Barbu, *Random coordinate descent methods for non-separable composite optimization*, in Proceedings of European Control Conference 2021.
3. X. Cheng, **I. Necoara**, *An H2 clustering-based model reduction of linear network passive systems*, in Proceedings of European Control Conference, 2020.
4. T. Ionescu, O. Iftimie, **I. Necoara**, *H2 moment matching-based model reduction with preservation of poles, zeros and stability*, in Proceedings of European Control Conference, 2020.
5. A. Nedich, **I. Necoara**, *Random minibatch projection algorithms for convex feasibility problems*, in Proceedings of Conference on Decision and Control (invited paper), 2019.
6. O. Fercoq, A. Alacaoglu, **I. Necoara**, V. Cevher, *Almost surely constrained convex optimization*, in Proceedings of International Conference on Machine Learning (ICML), <http://proceedings.mlr.press/v97>, 2019.
7. **I. Necoara**, *Minibatch stochastic first order methods for convex optimization*, International Conference on Continuous Optimization (invited paper), 2019.
8. **I. Necoara**, *Random gradient algorithms for convex minimization over intersection of simple sets*, in Proceedings of European Control Conference, 2019.
9. **I. Necoara**, T. Ionescu, *Parameter selection for best H2 moment matching-based model approximation through gradient optimization*, in Proceedings of European Control Conference, 2019.
10. **I. Necoara**, M. Takac, *Random coordinate descent methods for linearly constrained convex optimization*, International Symposium on Mathematical Programming (invited paper), Bordeaux, July 2018.
11. **I. Necoara**, A. Patrascu, *OR-SAGA: Over-relaxed stochastic average gradient mapping algorithms for finite sum minimization*, in Proceedings of European Control Conference, Cyprus, June 2018.
12. D. Lupu, **I. Necoara**, *Primal and dual first order methods for SVM: applications to driver fatigue monitoring*, in Proceedings of International Conference on System Theory, Control and Computing, Sinaia, October 2018.
13. **I. Necoara**, *On the convergence behavior of stochastic first order methods*, Conference on Recent Advances in Artificial Intelligence, Bucharest, June 2017.
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15. **I. Necoara**, V. Nedelcu, D. Clipici, L. Toma, *On fully distributed dual first order methods for convex network optimization*, in Proceedings of IFAC World Congress, 2017.
16. T. Ionescu, **I. Necoara**, *A scalable moment matching-based model reduction technique of linear networks*, in Proceedings of IFAC World Congress, 2017.
17. A. Patrascu, **I. Necoara**, *Complexity certifications of inexact projection primal gradient method for convex problems: application to embedded MPC*, in Proceedings of Mediterranean Conference on Control and Automation, 2016.
18. **I. Necoara**, Yu. Nesterov, F. Glineur, *Linear convergence of first order methods for non-strongly convex optimization*, invited paper in session “Recent advances on convergence rates of first-order methods” at International Conference Continuous Optimization, 2016.

19. **I. Necoara**, A. Patrascu, F. Glineur, *Complexity of first order inexact Lagrangian and penalty methods for conic convex programming*, invited paper in session “First order methods for convex optimization problems” at European Conference on Operational Research, 2016.
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21. **I. Necoara**, *Distributed and parallel random coordinate descent methods for huge convex programming over networks*, invited paper in session “Randomized algorithms for distributed computation over networks”, in Proceedings of Conference on Decision and Control, 2015 (ISI, ieeexplore).
22. **I. Necoara**, A. Patrascu, *On the behavior of first-order penalty methods for conic convex programming when Lagrange multipliers do not exist*, invited paper in session “Large scale optimization II”, in Proceedings of Conference on Decision and Control, 2015 (ISI, ieeexplore).
23. **I. Necoara**, Sverre Kvamme, *DuQuad: a toolbox for solving convex quadratic programs using dual first order algorithms*, in Proceedings of Conference on Decision and Control, 2015 (ISI, ieeexplore).
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25. A. Patrascu, **I. Necoara**, M. Barbu, S. Caraman, *Implementable fast augmented Lagrangian optimization algorithm with application in embedded MPC*, in Proceedings of International Conference on System Theory, Control and Computing, 2015 (ISI, ieeexplore).
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27. **I. Necoara**, A. Nedich, *A fully distributed dual gradient method with linear convergence for large-scale separable convex problems*, in Proceedings of European Control Conference, 2015.
28. **I. Necoara**, R. Findeisen, *Parallel and distributed random coordinate descent method for convex error bound minimization*, in Proceedings of American Control Conference, Chicago, 2015 (ISI, ieeexplore).
29. **I. Necoara**, *Worst-case computational complexity analysis for embedded MPC based on dual gradient method*, in Proceedings of International Conference on System Theory, Control and Computing, 2014 (ISI, ieeexplore), received the Best Paper Award.
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31. **I. Necoara**, F. Stoican, A. Patrascu, D. Clipici, M. Hovd, *A linear MPC algorithm for embedded systems with computational complexity guarantees*, in Proceedings of International Conference on System Theory, Control and Computing, 2014 (ISI, ieeexplore).
32. A. Patrascu, **I. Necoara**, P. Patrinos, *A proximal alternating minimization method for ℓ_0 -regularized nonlinear optimization problems: application to state estimation*, in Proceedings of Conference on Decision and Control, 2014 (ISI, ieeexplore).
33. A. Patrascu, **I. Necoara**, *Coordinate descent methods for ℓ_0 regularized optimization problems*, SIAM Conference on Optimization, 2014.
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35. **I. Necoara**, D. Clipici, P. Patrinos, A. Bemporad, *MPC for power systems dispatch based on stochastic optimization*, in Proceedings of IFAC World Congress, 2014.
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37. N.A. Nguyen, S. Oлару, P. Rodriguez-Ayerbe, M. Hovd, **I. Necoara**, *Inverse parametric convex programming problems via convex liftings*, in Proceedings of IFAC World Congress, 2014.
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39. Q. Tran-Dinh, **I. Necoara**, M. Diehl, *A dual decomposition algorithm for separable nonconvex optimization using the penalty function framework*, in Proceedings of Conference on Decision and Control, (ISI, ieexplore).
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41. **I. Necoara**, V. Nedelcu and D. Clipici, *Feasible distributed MPC scheme for network systems based on an inexact dual gradient method*, in Proceedings of IEEE Asian Control Conference, I 2013.
42. **I. Necoara**, Y. Nesterov and F. Glineur, *A random coordinate descent method on large optimization problems with linear constraints*, International Conference on Continuous Optimization, 2013.
43. Q. Tran-Dinh, **I. Necoara**, M. Diehl, *Fast decomposition algorithms for large-scale separable convex optimization*, International Conference on Continuous Optimization, 2013.
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48. **I. Necoara**, *Suboptimal distributed MPC based on a block-coordinate descent method with feasibility and stability guarantees*, in Proceedings of Conference on Decision and Control, 2012.
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51. A. Hanchevici, **I. Necoara**, *Networked Control Strategies for a 3 Dimensional Crane*, in Proceedings of Conference on Control Applications, 2012.
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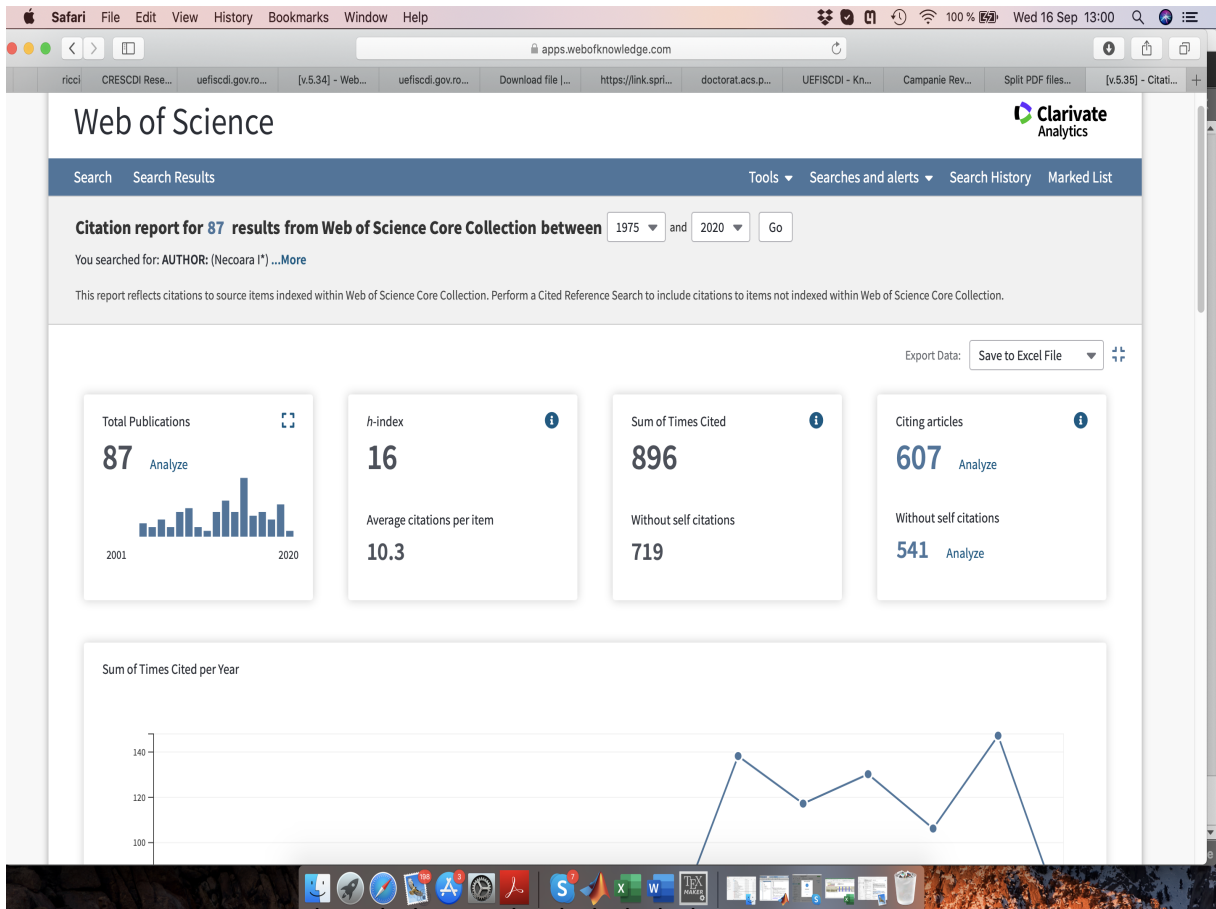
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Citări

- Citări Google Scholar: 2400, h-index 26
- Citări Web of Science in data de 16 Septembrie 2020: 719 (fără autocitări), h-index 16



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