Institutul de Mecanica Solidelor al Academiei Romane

Cercetator stiintific I dr. Nicolae POP

1. Cele mai relevante 10 articole pentru realizarile profesionale obtinute ulterior conferirii titlului de doctor in 1997

1. **N. POP**,*Finite elements analysis of frictional contact problem during the process of metal working*, American Journal of Applied Sciences, Volume: 5, Issue: 2, Pages:152-157, ISSN:1546-9239, (2008)
2. **N. POP**, *On the Convergence of the Solution of the Quasi-Static Contact Problems with Friction Using the Uzawa Type Algorithm*, Studia Univ. "Babes-Bolyai", Mathematica, Volume **XLV**II, Number 3, pp. 125-132, 2003.
3. **N. POP**, *Preconditioning Uzawa Algorithm for Contact Problems*, "Annual Meeting of the International Association of Applied Mathematics and Mechanics, University of Bremen, 31st March-4th April 2008, Proceedings in Applied Mathematics and Mechanics, PAMM · Proc. Appl. Math. Mech. **8**, pp. 10985 – 10986 (2008) / **DOI** 10.1002/pamm.200810985, (2008)
4. **N Pop**, L Vladareanu, IN Popescu, C Ghiţă, A Gal, S Cang, H Yu, V Bratu,M Deng, *A numerical dynamic behaviour model for 3D contact problems with friction*, Computational Materials Science 94, 2014, 285-291
5. **N. POP**, Cioban H., Horvat-Marc A., *Finite element method used in contact problems with dry friction*, Computational Materials Science, Volume: 50, Issue: 4, Pages: 1283-1285, ISSN: 0927-0256 , (2011)
6. Ghita C., **Pop N.,** Popescu IN., *Existence result of an effective stress for an isotropic visco-plastic composite*, Computational Materials Science, Volume: 64, Pages: 52-56, ISSN: 0927-0256, (2012)
7. G. Groza and **N. POP**, *Approximate Solution of Multipoint Boundary Value Problems for Linear Differential Equations by Polynomial functions*, Journal of Difference Equations and Applications, Volume **14**, Issue **12**, 1289-1309, ISSN:1023-6198, (2008)
8. Ghita C., **Pop N.,** Cioban H., *Quasi-Static behavior as a limit process of a dynamical one for an anisotropic hardening material*, Computational Materials Science, Volume: 52, Issue: 1 , Pages: 217-225, ISSN: 0927-0256, (2012)
9. **N. POP**, *Analysis of an evolutionary variational inequality arising in elasticity quasistatic contact problems*, Advanced Studies in Pure Mathematics, **53, 2009,** Advances in Discrete Dynamical Systems**,** pp.225-235, ISBN: 978-4-931469-49-5
10. **N. POP**, *An algorithm for solving nonsmooth variational inequalities arising in frictional quasistatic contact problems*, Carpathian Journal of Mathematics, Vol. **24**, No. 2, 110-119, ISSN:1584-2851, (2008)

2. Teza de doctorat

N. POP, *Studiul analitic si numeric al problemelor de contact cu frecare***,** Universitatea "Babeș-Bolyai" din Cluj-Napoca, sustinuta in 19 decembrie 1997, Conducător științific: Profesor univ. dr. Gh. Micula

3. Carti si capitole in carti

3.1. Carti de specialitate

1. A. Carabineanu, **N. POP,** S. Sburlan, *Probleme la limita in mecanica mediilor continue*, Valahia University Press, ISBN: 978-606-603-011-3, (217pagini), (2011)

2. **N. POP**, *Variational analysis and numerical methods for contact problems in elasticity*, 2009, Editura Universității de Nord din Baia Mare, (199pp.), ISBN 978-606-536-009-9 (2009)

3. I.Pavăloiu, **N. POP**, *Interpolare si Aplicații*, Editura Risoprint, Cluj-Napoca (322 pagini), ISBN 973-651-026-3 (2005)

3.2.Cursuri universitare

4. N. POP, *Metode numerice de calcul*, Editura Risoprint, Cluj-Napoca, ISBN 973-656-335-9, 168 pagini, (2002)
5. N. Pop, *Aplicaţii ale inecuaţiilor variaţionale, în probleme de contact elastic*, Cub Press 22,ISBN 973-98169-2-4, 203 pagini, (1998)
6. N. POP, *Metode numerice în rezolvarea ecuaţiilor diferenţiale cu derivate parţiale*, Cub Press 22, 1998, ISBN 973-98169-1-6, 176 pagini,(1998)
7. **N. POP**, *Calcul numeric. Note de curs*, Tipografia Universitatii de Nord Baia Mare, 124 pagini, (1999)

4. Articole publicate in reviste din fluxul stiintific international principal

4.1 Articole publicate in reviste clasificate ISI

1. M. Marin, E.–M. Craciun, and **N. Pop**, Considerations on mixed initial-boudary value problems for micropolar porous bodies, *Dynamic Systems and Applications* 25 (**2016**) xx-xx, manuscript of accpeted paper DSA-36-13
2. N Pop, L Vladareanu, IN Popescu, C Ghiţă, A Gal, S Cang, H Yu, V Bratu,M Deng, A numerical dynamic behaviour model for 3D contact problems with friction, Computational Materials Science 94, 2014, 285-291
3. G. Groza, M. Jianu and **N. Pop**, Infinitely differentiable functions represented into Newton interpolating series, 30 (2014), No. 3, 2014, 309 – 316
4. Ghita C., **Pop N.,** Popescu IN., *Existence result of an effective stress for an isotropic visco-plastic composite*, Computational Materials Science, Volume: 64, Pages: 52-56, ISSN: 0927-0256, (2012)
5. Ghita C., **Pop N.,** Cioban H., *Quasi-Static behavior as a limit process of a dynamical one for an anisotropic hardening material*, Computational Materials Science, Volume: 52, Issue: 1, Pages: 217-225, ISSN: 0927-0256, (2012)
6. Pop N., Cioban H., Horvat-Marc A., *Finite element method used in contact problems with dry friction*, Computational Materials Science, Volume: 50, Issue: 4, Pages: 1283-1285, ISSN: 0927-0256 , (2011)
7: G. Groza, S. M. Ali Khan and **N. Pop**, *Approximate Solutions of Boundary Value Problems for ODEs using Newton Interpolating Series*, Carpathian J. Math. 25, No.1, 73-81, 2009, ISSN:1584-2851, (2009)
8: **N. POP**, *An algorithm for solving nonsmooth variational inequalities arising in frictional quasistatic contact problems*, Carpathian Journal of Mathematics, Vol. **24**, No. 2, 110-119, ISSN:1584-2851, (2008)
9: G. Groza and **N. POP**, *Approximate Solution of Multipoint Boundary Value Problems for Linear Differential Equations by Polynomial functions*, Journal of Difference Equations and Applications, Volume **14**, Issue **12**, 1289-1309, ISSN:1023-6198, (2008)
10: G. Groza and **N. POP**, *A numerical method for solving of the boundary value problems for ordinary differential equations*, Results in Mathematics, Volume **53**, Issue:3-4, Pages:295-302, ISSN: 1422-6383, (2009).

4.2.Articole publicate in volume ISI ale unor manifestări internaționale de specialitate

11. Vladareanu, L.; **Pop, N.**; Gal, Al.; et al., The 3D Elastic Quasi-static Contact Applied to Robots Control, Book Group Author(s): IEEE, Conference: International Conference on Advanced Mechatronic Systems (ICAMechS) Location: Luoyang, SEP 25-27, 2013, 2013 INTERNATIONAL CONFERENCE ON ADVANCED MECHATRONIC SYSTEMS (ICAMECHS) Book Series:International Conference on Advanced Mechatronic Systems Pages: 517-523 Published: 2013
12. N. POP, *Quasi-static frictional contact in solid mechanics, Numerical analysis and applied mathematics*, vols 1 and 2, AIP Conference, Volume: 116, Pages: 1038-1041, ISSN: 0094-243X, ISBN: 978-7354-0709-1, (2009)
13. N. POP, L. Vladareanu, P. Pop, *Finite Element Analysis of Quasistatic Frictional Contact Problems with an Incremental-Iterative Algorithm*, Proceedings of the 8th International Conference on Applications of Electrical Engineering/8th International Conference on Applied Electromagnetics, Wireless and Optical Communications, Book Series: Electrical and Computer Engineering Series, Pages: 173-178 , ISBN: 978-960-474-072-7, (2009)

14: **N. POP**, *A nonsmooth algorithm for solving the frictional quasistatic contact problems*, MACMESE 2008: Proceedings of the 10th WSEAS International Conference on Mathematical and Computational Methods in Science and Engineering, pts I and II, Book series: Mathematics and Computers Science and Engineering, Pages: 352-357, ISSN: 1790-2769, ISBN: 978-960-474-019-2 (2008)

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16. N. POP, P., Pop, *Numerical approximation of the contact problem in elasticity with mixec finite element method*, APLIMAT 2007 - 6th International Conference, pt II, Pages: 285-287 , ISBN: 978-80-969562-5-8 (2007)

17: **N. POP**, *On the Existence of the Solution for the Equations Modelling Contact Problems*, Mathematics and mathematics educations, 3rd Palestinian International Conference on Mathematics and Mathematics Education, 09-12 August 2000 Bethlehem Univ Betlehem Israel, Pages: 196-207, 2002, ISBN: 981-02-4720-6 (2000)

4.3. Articole in reviste indexate în baze de date internaționale

18. Piscan, I., Predincea, N., **Pop, N**., *Finite element analysis and design exploration of a bolted joint*, Advanced Materials Research, 463-464 , pp. 1601-1604, (2012)

19. Groza, G., **Pop, N**., Newton interpolating series at m distinct points with coefficients in a real Banach algebra, *International Journal of Mathematics and Mathematical Sciences* 2011 , art. no. 365491, 2011

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23. P. Pop, Corina Pop Sitar, **N. Pop**, Ioana Zelina, *A Local-global Approach to Generalized Network Design Problems*, WSEAS Transaction on Computer Research, Issue 2, Vol. **2**, 220-226, ISSN: 1991-8755, (2007)

24. N. POP and T. Petrila, *Finite Element Discretization of some Variational Inequalities Arising in Contact Problems with Friction*, Analele Universității București, Matematica, Nr. 1, **55**, 111-120, ISSN: 1010-5433, (2006)

25. N. POP, I. Zelina, *A quadratic programming method for saddle point formulations in contact problems with friction*, Carpathian Journal of Mathematics, vol. **20**, no.1, 95-100, ISSN:1584-2851, (2004)

26. N. POP, *Numerical Simulations for the 3D Frictional Contact Problems*, Ingenerare. Revista de la Facultad de Ingenieria de la Pontificia Universidad Catolica de Valparaiso – CHILE, numero **17**, pp. 33-38, ISSN:0717-5035, (2004)

27. N. POP, *On the Convergence of the Solution of the Quasi-Static Contact Problems with Friction Using the Uzawa Type Algorithm*, Studia Univ. "Babes-Bolyai", Mathematica, Volume **XLV**II, Number 3, pp.125-132, (2003)

28. N. POP, *On the stability of the finite element mixed approximation for contact problems with friction,* Bul. Ştiinţ. Seria B, Matem-Inf. Vol. XVIII , Nr. 1, pp. 89-94, (2002)

29. N. POP, *A Preconditioning Method of ill Conditioned Matrices using Wavelets B*ases , Bul. Şt. Seria B, Matem-Inf. Nr. 2 , vol. 1-2,pp. 107-113, (2001)

30. N. POP, *A generalized concept of a differentiability in Newton's method for contact problems*, Bul. Stiinţ. Baia Mare , seria B, Fasc. Mat.-Inf. Vol. XVI, No. pp. 307-314, (2000)

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4.3. Articole publicate în reviste ale Academiei Române indexate în baze de date

34. N. POP, "*Generalized Newton's Method For Solving Nonlinear and Nondifferentiable Algebraic Systems*", Journal Of Numerical Analysis And Approximation Theory (formerly "Revue d'Analyse Num´erique et de Th´eorie de l'Approximation") J. Numer. Anal. Approx. Theory, vol. 44 (2015) no. 1, pp. 11–17

35. N. POP, C. Ghita, *Numerical simulation of the quasistatic contact problem with damage*, Revue Roumaine des Sciences Techniques, Serie de Macanique Appliquee, Roumanian Journal of Technical Sciences Applied Mechanics, Tome 56, no: 3, pp-261-271, (2011)

36. G. Groza**, N. POP,** *Interpolation par des functions entieres*, Revue D'Analyse Numerique et de Theorie de L'Approximation, **35** (1), 53-58, ISSN:1222-9024, (2006)

5. Articole publicate în volumele unor conferinte internaționale de specialitate

37.N.POP, *Dynamic Contact Problems in Linear Viscoelasticity*, Discrete Dynamics and Difference Equations. Proceedings of the Twelfth International Conference on Difference Equations and Applications, pp. 365-374, World Scientific Publishing Co. Pte. Ltd., Singapore, 2010, ISBN:-13 978-981-4287-64-7, ISBN-10 981-4287-64-4

38. N. Pop, L.Vladareanu, A. Gal, *The Extension Real Time Control Method for Restoring the Robot Equilibrium Position*, Recent Advances in Robotics, Aeronautical and Mechanical Engineering, Proceedings of the 1st International Conference on Mechanical and Robotics Engineering (MREN '13), Vouliagmeni, Athens, Greece, May 14-16, 2013. Pp.137-143, ISSN: 2227-4596, ISBN: 978-1-61804-185-2, (2013)

39. N. POP, H. Cioban, L. Butnar, *The Quasistatic Model of Contact Problem with Friction*, The 20th International DAAAM SYMPOSIUM "Intelligent Manufacturing & Automation: Focus on Theory, Practice ans Education", 25-28th November 2009, Vienna, Austria, 863-864, ISBN 978-3-901509-70-4, ISSN 1726-9679 (2009)

40. H. Cioban, L. Butnar, **N. POP**, *Contact Model of Ellipsoidal Worm-Gears*, The 20th International DAAAM SYMPOSIUM "Intelligent Manufacturing & Automation: Focus on Theory, Practice ans Education", 25-28th November 2009, Vienna, Austria, 465-466, ISBN 978-3-901509-70-4, ISSN 1726-9679, (2009)

41. L. Butnar, **N. POP**, H. Coiban, *Researces Concerning friction Influene on Material Flow in Inverse Extrusion of Toothed Gears*, The 20th International DAAAM SYMPOSIUM "Intelligent Manufacturing & Automation: Focus on Theory, Practice ans Education", 25-28th November 2009, Vienna, Austria, 797-798, 2009, ISBN 978-3-901509-70-4, ISSN 1726-9679, (2009)

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44. H. Cioban, **N. POP**, *Some Aspects Regarding the Information and the Quality Management in a CAD Services Company*, The 19th International DAAAM SYMPOSIUM "Intelligent Manufacturing & Automation: Focus on Next Generation of Intelligent Systems and Solutions" 22-25th October 2008, Trnava, Slovacia, Pages: 255-256, 2008, ISBN 978-3-901509-68-1, ISSN 1726-9679, (2008)

45. G. Groza and **N. POP**, *Numerical Solutions of Two-point Bondary Value Problems for Ordinary Differential Equations using Particular Newton Interpolating Series*, pp.165-176, Applied Analysis and Differential Equations, Editors: Ovidiu Carja and Ioan I. Vrabie World Scientific Publishing, ISBN/ISSN 978-981-270-594-5;981-270-594-5, MR2343669, (2007)

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47. I., Zelina, **N. POP**, *Parallel Lagrange-Hermite Interpolation on Extended Fibonacci Cubes*, „MicroCAD International Scientific Confernce 10-11 March 2005" Univerity of Mikolc, pp. 179-184, ISSN/ISBN: 963 661 646 9 o/963 661 653 1, (2005)

48. N. POP, I. ZELINA, *Implementation of Uzawa Algorithm for Saddle Point Formulations in Contact Problems with Friction*, „MicroCAD International Scientific Confernce 10-11 March 2005" Univerity of Mikolc, pp. 125-130, ISSN/ISBN:963 661 646 9 o/963 661 653 1, (2005)
49. N. POP, *An Incremental-Iterative solution of 3D Frictional Contact Problems*, "International Conference on Manufacturing Systems" (ICMaS 2004), Published by Editura Academiei Romane, ISSN 0035-4047, ISBN: 973-27-1102, pp. 129-132, (2004)
50. N. POP, *On the Convergence of the Uzawa Type Algorithm used in Contact Problems with Friction for Dual Variational Formulation,* "SISOM-2003", IMSAR, Bucharest, 15-16 mai, pp. 121-126,(2003)
51. N. POP, *On the convergence of the solution for quasistatic contact problems with friction*, "The 10th International Symposium of Mathematics and its Applications "Politehnica" University of Timisoara, November 6-9, pp. 290-297,(2003)
52. N. Pop, *Error estimates for the solution approximation of the contact problems*, 5th International Conference on Boundary and Finite Element, Elfin 5, pp. 151-156, 25-27 May 2000, Oradea,(2000)
53. N. Pop, *Existence of the solution for the equations modelling the static and dynamic elastic contact problems*, Fifty years of activity of the Institute of Solid Mechanics, Romanian Academy, pp.49-59, (1999)

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