

**Списък на публикациите
на проф. дн инж. Анжела Славова Попиванова
според базите данни Scopus, Web of Science, IEEE,
Zentralblatt
за участие в конкурса**

Монографии и книги:

1. Slavova, A., Cellular Neural Networks: Dynamics and Modeling, Kluwer Academic Publisher, 2003
2. Popivanov, P., Slavova, A., Nonlinear waves. Introduction. World Scientific, Singapore, 2011.
3. Slavova A., P. Zecca. Modeling Natural Phenomena via Cellular Nonlinear Networks. Cambridge Scholars Publishing, 2017, ISBN:978-1-5275-0365-6.
4. Popivanov, P., Slavova, A., Nonlinear Waves. Geometrical Approach, World Scientific, Singapore, 2019.

Книга:

1. Chua, L., Tetzlaff, R., Slavova, A., Memristor Computing Systems, Springer, 2022

Статии:

А. Статии в списания с импакт фактор

Q1

1. A. Slavova, P. Zecca, Complex behavior of polynomial FitzHugh-Nagumo cellular neural network model, Nonlinear Analysis: Real World Applications, 8(4), 2007, 1331-1340 IF 1.232 Q1
2. G. Agranovich, E. Litsyn, A. Slavova, Impulsive control of a hysteresis cellular neural network model, Nonlinear analysis: Hybrid Systems, 3(1), 2009, 65-73 SJR 1.66 Q1
3. P. Popivanov, A. Slavova, P. Zecca, Compact traveling waves and peakon type solutions of several equations of mathematical physics and their Cellular Neural Network realization, Nonlinear analysis: Real World Applications, 10(3), 2009, 1453-1465 IF 2.381 Q1
4. R. Cancelliere, M. Gai, A. Slavova, Application of polynomial cellular neural networks in diagnosis of astrometric chromaticity, Applied Mathematical Modeling, 34(12), 2010, 4243-4252 IF 1.371 Q1

5. R. Agliardi, P. Popivanov, A. Slavova, Nonhypoellipticity and comparison principle for partial differential equations of Black Scholes type, *Nonlinear analysis: Real World Applications*, 12(3), 2011, 1429-1436 IF 2.043 Q1
6. A. Slavova, P. Popivanov. Regularity and solvability of pseudo-differential operators with double characteristics. *Mediterranean Journal of Mathematics*, 16, 5, Springer, 2019, ISSN:1660-5446, DOI:10.1007/s00009-019-1396-9, 121. JCR-IF (Web of Science):1.181 Q1
7. G. Agranovich, E. Litsyn, A. Slavova, Dynamical behavior of integro-differential boundary value problem arising in nano-structures via Cellular nanoscale Network approach, *J. Computational and Applied Mathematics*, 352, Elsevier, 2019, ISSN:0377-0427, DOI:https://doi.org/10.1016/j.cam.2018.11.024, 62-71. SJR (Scopus):0.849, JCR-IF (Web of Science):1.883 Q1
8. A. Slavova, P. Popivanov. Explicit solutions of some equations and systems of mathematical physics. *Advances in Difference Equations*, 2020, 592, Springer, 2020, ISSN:1687-1847, DOI:https://doi.org/10.1186/s13662-020-03031-y, 284-298. SJR (Scopus):0.677, JCR-IF (Web of Science):2.421 Q1
9. P. Popivanov, A. Slavova, Short Proofs of Explicit Formulas to Boundary Value Problems for Polyharmonic Equations Satisfying Lopatinskii Conditions, *Mathematics*, Volume 10, Issue 23 December 2022 Article number 4413, DOI 10.3390/math10234413, JCR-IF (Web of Science):2.591 Q1
10. A. Slavova A., V. Ignatov, Edge of Chaos in Memristor Cellular Nonlinear Networks, *Mathematics*, Volume 10, Issue 8 April-2 2022 Article number 1288, DOI 10.3390/math10081288, JCR-IF (Web of Science):2.591 Q1
11. A. Slavova, V. Ignatov, Memristor Cellular Nonlinear Networks, *Mathematics* 11(7):1601, 2023, IF 2.4, Q1
12. P. Popivanov, A. Slavova, Some Non-Linear Evolution Equations and Their Explicit Smooth Solutions with Exponential Growth Written into Integral Form, March 2024, *Mathematics* 12(7):1003 IF 2.4 Q1

Q2

1. A. Slavova, Dynamic properties of cellular neural networks with nonlinear output function, *IEEE Trans. CAS I: Fundamental Theory and Applications*, 45(5), 1998, 587-590 IF 0.739 Q2
2. R. Cancelliere, A. Slavova, Dynamics and stability of generalized cellular nonlinear network model, *Applied Mathematics and Computation* 165 (1), 2005, 127-136 IF 0.688 Q2
3. P. Popivanov, A. Slavova, L. Zanghirati, *C.R.Acad.Bulg.Sci.*, 62(3), 2009, 303-314 IF 0.204 Q2
4. P. Popivanov, A. Slavova, P. Zecca, Regularizing property of the solutions of a dissipative semilinear wave equation, *C.R.Acad.Bulg.Sci.*, 63(7), 2010, 861-970 IF 0.219 Q2
5. A. Slavova, V. Rashkova, Convection diffusion model for image processing, *C.R.Bulg.Acad.Sci.*, 64(3), 2011, 339-344 IF 0.210 Q2
6. T. Melton, A. Slavova, Traveling wave solutions of FitzHugh-Nagumo CNN model

- with hysteresis, C.R.Bulg.Acad.Sci., 64(5), 2011, 653-658 IF 0.210 Q2
7. R. Agliardi, P. Popivanov, A. Slavova, On some boundary-value problems for second order PDEs arising in finance, C.R.Bulg.Acad.Sci., 64(10), 2011, 1383-1392 IF 0.210 Q2
 8. P. Popivanov, A. Slavova, Rarefaction waves for quasilinear hyperbolic systems. Creation of δ - singularities to the Riemann problem, C.R.Bulg.Acad.Sci., 65(10), 2012, 1325-1334 IF 0.211 Q2
 9. A. Slavova, P. Zecca, Traveling wave solution of polynomial cellular neural network model for Burgers-Huxley equation, C.R.Bulg.Acad.Sci., 65(10), 2012, 1335-1342 IF 0.211 Q2
 10. T. Rangelov, A. Slavova, Dynamic behavior of piezoelectric solid via CNN approach, C.R.Bulg.Acad.Sci., 66(6), 2013, 801-808 IF 0.198 Q2
 11. A. Slavova, R. Tetzlaff, Edge of Chaos in Reaction Diffusion CNN Model, Open Mathematics, 15(1), 2017, 21-29 ISSN: 2391-5455, IF 0.831 Q2
 12. E. Litsyn, A. Slavova, Dynamic behavior of integro-differential boundary-value Problem via Cellular Nanoscale Network approach, C.R.Bulg.Acad.Sci., 70(6), 2017, 753-760 IF 0.270 Q2
 13. A. Slavova, G. Bobeva, On cellular nanoscale network model arising in nano structures, C.R.Bulg.Acad.Sci., 71(7), 2018, 955-961 IF 0.321 Q2
 14. P. Popivanov, A. Slavova, Explicit formulas to solutions of the nonlinear Schrodinger equation with power and logarithmic type nonlinearities, C.R.Bulg.Acad.Sci., 72(3), 2019, 283-291 IF 0.343 Q2
 15. P. Popivanov, A. Slavova, Explicit solutions of the hyperbolic Monge-Ampere type equation, of a nonlinear evolution system and their qualitative properties, C.R. Bulg. Acad. Sci., 73(6), 2020, 767-775 IF 0.343 Q2
 16. P. Popivanov, A. Slavova, Full classification of the traveling wave solutions of Fornberg-Whitham equation. Solutions into explicit form, C.R.Bulg.Acad.Sci., 65(5), 2012, 563-574 IF 0.211 Q2

Q3

1. A. Slavova, Applications of some mathematical methods in the analysis of cellular neural networks, J. Computational and Applied Mathematics, 114(2), 2000, 387-404 IF 0.455 Q3
2. A. Slavova, CNN model for semilinear parabolic equation with memory. C. R. Acad. Bulg. Sci. 56, No. 10, 11-16 (2003). Q3
3. P. Popivanov, A. Slavova, Cellular neural network model for nonlinear waves with exponential memory, Lecture Notes in Computer Science, vol. 1988, 2001, 684-691 IF 0.415 Q3
4. A. Slavova, P. Zecca, CNN model for studying dynamics and traveling wave solutions of FitzHugh-Nagumo equation, J. Computational and Applied Mathematics, 15(1), 2003, 13-24 IF 0.567 Q3
5. R. Agliardi, P. Popivanov, A. Slavova, A general framework for some economic problems with uncertainty and exogenous barriers, Economic Modeling, 29(6), 2012, 2320-2324 IF 0.557 Q3
6. A. Slavova, R. Tetzlaff, CNN computing of double Sine-Gordon equation with

physical applications, C.R.Bulg.Acad.Sci., 67(1), 2014, 21-28 IF 0.284 Q3
 7. Slavova, G.Bobeva, Local Activity of CNN with Dynamic Memory Synapses, C.R.Bulg.Acad.Sci., 69(11), 2016, 1401-1406, ISSN: 1310-1331, IF 0.251 Q3

Q4

1. G. Agranovich, E. Litsyn, A. Slavova, Discrete-continuous control of bifurcation and oscillatory behavior in a class of Cellular Neural Networks, Neural, Parallel and Scientific Computations, 13 (3-4), 2005, 393-410 Q4
2. P. Popivanov, A. Slavova, P. Zecca, Periodic solutions of the Burgers-Hopf equation with small parameter and its cellular neural networks model, Mediterranean J. of Mathematics, 5(1), 2008, 1-19 IF 0.357 Q4
3. P. Popivanov, A. Slavova, On Ventcel's type boundarycondition for Laplace operator in a sector, J. of Geometry and Symmetry in Physics, 31, 2013, 119-130 SJR 0.17 Q4
4. P. Popivanov, A. Slavova, Exact formulas to the solutions of several generalizations of the nonlinear Schrödinger equation. Boggiatto, Paolo (ed.) et al., Advances in microlocal and time-frequency analysis. Contributions of the conference on microlocal and time-frequency analysis 2018, MLTFA18, in honor of Prof. Luigi Rodino on the occasion of his 70th birthday, Torino, Italy, July 2–6, 2018. Cham: Birkhäuser. Appl. Numer. Harmon. Anal., 419-429 (2020) SJR 0.13 Q4
5. A. Slavova, R.Tetzlaff, Memristor CNNs with hysteresis, Studies in Computational Intelligence, Springer Series, 793, 2019, 383-394 SJR 0.19 Q4
6. A. Slavova, R. Tetzlaff, Memory computing on the edge of chaos, Advanced Computing in Industrial Mathematics, Springer 2023, pp. 133-144, SJR 0.184 Q4

Б. Статии с SJR

1. A. Slavova, Z.Zafirova, Dynamic behavior of integro-differential CNN model, AIP Conference Proceedings 2048, 2018, 060002 SJR 0.18
2. A.Slavova, Z.Zafirova. Dynamics of viscoelastic Burgers'cellular neural networks model. AIP Conference Proceedings, 2159, AIP, 2019, ISBN:978-0-7354-1904-9, DOI:10.1063/1.5127496, 030031. SJR (Scopus):0.18
3. A.Slavova, Z.Zafirova. Harmonic balance method for studying CNN model of differential equations. AIP Conference Proceedings, 2172, AIP, 2019, ISBN:978-0-7354-1919-3, DOI:10.1063/1.5133502, 030013. SJR (Scopus):0.18
4. A.Slavova. Local activity in reaction-diffusion CNN models. AIP Conference Proceedings, 2159, AIP, 2019, ISBN:978-0-7354-1904-9, DOI:10.1063/1.5127495, 030030. SJR (Scopus):0.18
5. A.Slavova, P.Popivanov. Degenerate Hyperbolic Operators which are not Locally Solvable and do not Propagate Singularities. AIP Conference Proceedings, AIP, 2021, SJR (Scopus):0.19
6. A.Slavova, E.Litsyn. Stabilizing Control of Integro-Differential CNN Model Arising

- in Nanostructures. AIP Conference Proceedings, AIP, 2021, SJR (Scopus):0.19
7. P. Popivanov, A. Slavova, Explicit solutions and geometric visualization of the solutions of several classes of nonlinear Schrödinger equations arising in physics, AIP Conference Proceedings, vol. 2459, Article 0300308, 2022, SJR 0.19
 8. A. Slavova, V. Ignatov, Local activity in reaction-diffusion equations and pattern formation, AIP Conference Proceedings, vol. 2459, Article 030033, 2022, SJR 0.19
 9. P. Popivanov, A. Slavova, Radial and non-radial solutions for local and non-local Liouville type equations, AIP Conference Proceedings, Article 030042, 2022, SJR 0.19
 10. A. Slavova, Cellular Nonlinear Computing on the Edge of Chaos, Mathematics in Industry, Springer Proc. Math. And Stat., Volume 39, Pages 197 – 201, 2022, SJR 0.20
 11. A. Slavova, Dynamical Behaviour of Integro-Differential Equations Arising in Nano-Structures, Functional Differential Equations and Applications, Springer Proc. Math. And Stat., pp. 3-14, 2022, DOI: 10.1007/978-981-16-6297-3_1, SJR 0.20
 12. A. Slavova, V. Ignatov, Cellular Neural Networks computing of EEG signals, CompSysTech '23: International Conference on Computer Systems and Technologies 2023, ACM Proceedings, 2023, SJR 0.2
 13. P. Popivanov, A. Slavova, Boundary Value Problems for the Polyharmonic Operators, New Trends in the Applications of Differential Equations in Sciences, Springer Proc. Math. And Stat., 2023, pp. 35-50, DOI: 10.1007/978-3-031-21484-4_4, SJR 0.20
 14. P. Popivanov, A. Slavova, Several Properties of the Solutions of Linear and Semilinear Harmonic and Polyharmonic Equations, New Trends in the Applications of Differential Equations in Sciences, Springer Proc. Math. And Stat., 2023, pp. 153-162, DOI: 10.1007/978-3-031-21484-4_14, SJR 0.20
 15. P. Popivanov, A. Slavova, Graphical Portraits of the Solutions of Binary First Order Nonlinear Ordinary Differential Equation Near Their Singular Point, Springer Proc. Math. And Stat, vol.449, 2024, pp. 21-34, SJR 0.19
 16. A. Slavova, E. Litsyn, Physics Informed Cellular Neural Networks for Solving Partial Differential Equations, Springer Proc. Math. And Stat, vol. 449, 2024, pp. 35-46, SJR 0.19
 17. P. Popivanov, A. Slavova, Robin Boundary Value Problem for Some Nonlinear Nonlocal Elliptic Partial Differential Equations, Springer Proc. Math. And Stat, vol. 449, 2024, pp. 77-94, SJR 0.19
 18. A. Slavova, V. Ignatov, Edge of Chaos in Reaction-Diffusion System with Memristor Synapses, Springer Proc. Math. And Stat., vol. 449, 2024, pp. 407-418, SJR 0.19

В. Статии в IEEE

1. A. Slavova, Proc. Stability analysis of cellular neural networks with hysteresis nonlinearity in the feedback system, IEEE Int. Workshop on CNNA, 1996,
2. A. Slavova, Generalization of CNN with hysteresis nonlinearity, Proc. IEEE Int. Workshop on CNNA, 1998, 56-61

3. A. Slavova, CNN model for hyperbolic equations with hysteresis, Proc. IEEE Int. Workshop CNNA, 2000, 259-264
4. A. Slavova, Travelling waves in FitzHugh-Nagumo Cellular Neural Network Model, ECCTD 2003, I-113-I-116
5. A. Slavova, Dynamics and traveling waves in CNN vector disease model, IEEE Trans. CAS II: Express briefs, 53(11), 2006, 1304-1307
6. A. Slavova, New wave profiles in viscoelastic Burgers'RTD-based cellular neural network model, ECCTD 2009, 5274971, 2009, 81-84
7. A. Slavova, Cellular wave computing of fluxons and breaddons, 12th Intern. Workshop on CNNA, CNNA2010, 5430255, 2010
8. A. Slavova, V. Rashkova, A novel CNN based image processing model, ECCTD 2011, 6043323, 2011, 226-229
9. A. Slavova, P. Zecca, Cellular Neural Netowrks modeling of tsunami waves, Int. Workshop on CNNA, 2012, 6331405
10. A. Slavova, Stabilization of coupled reaction-diffusion CNN, ECCTD 2013, 6662311
11. A. Slavova, M.Markova, CNN modeling of nano-structures, ECCTD 2015, 7300116
12. A.Slavova, G.Bobeva, Local Activity in Reaction-Diffusion CNN with Memristor Synapses, Int. Workshop CNNA2016, 2016, 87-88 ISBN: 978-3-8007-4252-3
13. A. Slavova, V. Ignatov, CNN Computing of Piezoelectric Solid with Nano-Holes under Time-Harmonic Anti-Plane Load, Int. Workshop on CNNA2016, 81-82 ISBN: 978-3-8007-4252-3
14. A. Slavova, G. Bobeva, Determination of edge of chaos in hysteresis CNN model with memristor synapses, ECCTD 2017, 8093294
15. A. Slavova, V. Ignatov, Dynamics of CNN model of piezoelectric solids with nano-heterogeneities, ECCTD 2017, 8093325
16. A. Slavova, Z. Zafirova, Modeling and simulation of interaction of fluxons via CNN, ANNA 2018, 48-52
17. A. Slavova, G. Bobeva, Edge of chaos regime for CNN with dynamic memory synapses, ANNA 2018, 40-43
18. A. Slavova, Z. Zafirova, R. Tetzlaff, Edge of chaos in nanoscale memristor CNN, Proceedings- IEEE ISCAS 2019, 8702436
19. A. Slavova, Memristor CNN Model for Image Denoising, 2019 26th IEEE International Conference on Electronics, Circuits and Systems (ICECS), IEEE Explore, 2019
20. A. Slavova, Dynamics of a New Hysteresis Memristor CNN, ECCTD 2020, doi: 10.1109/ECCTD49232.2020.9218329
21. A. Slavova, V. Ignatov, Universal Cellular Computing on the Edge of Chaos, 2021 10th International Conference on Modern Circuits and Systems Technologies (MOCASST), IEEE Explore, 2021
22. A. Slavova, R. Tetzlaff, Edge of Chaos in Memristor CNN with Hysteresis and Applications in Pattern Formation, 2021 IEEE International Symposium on Circuits and Systems (ISCAS), IEEE Explore, 2021
23. A. Slavova, V. Ignatov, Pattern Formation in CNN Working on the Edge of Chaos, 2021 17th International Workshop on Cellular Nanoscale Networks and their

Applications (CNNA), IEEE Explore, 2021

24. A. Slavova, V. Ignatov, Bioinspired Cellular Nonlinear Networks working on the edge of chaos, IEEE, MOCAS 2022, DOI: 10.1109/MOCAS 2022.9837595

25. A. Slavova, V. Ignatov, Cellular Nonlinear Network Circuit Model with Application to Seizures Prediction, 12th International Conference on Modern Circuits and Systems Technologies (MOCAS), IEEE Explorer

Г. Статии реферирани в базите данни Scopus, Web of Science, Zentralblatt

1. A. Slavova, Modeling nonlinear waves and PDEs via cellular neural networks, *Annali dell'Universita di Ferrara*, 45(1), 1999, 311-326
2. A. Slavova, A., P. Zecca, CNN model for studying FitzHugh-Nagumo equation. *C. R. Acad. Bulg. Sci.* 53, No. 6, 31-34 (2000).
3. A. Slavova, Stability analysis of cellular neural networks with nonlinear dynamics, *Nonlinear Analysis: Real World Applications*, 2(1), 2001, 93-103
4. G. Agranovich, E. Litsyn, A. Slavova, Discrete-continuous control for chaotic cellular neural networks. *C. R. Acad. Bulg. Sci.* 55, No. 3, 9-14 (2002).
5. A. Slavova, Cellular neural network models of some equations from biology, physics and ecology. *Funct. Differ. Equ.* 10, No. 3-4, 579-591 (2003).
6. A. Slavova, M. Markova, Polynomial Lotka-Volterra CNN model. Dynamics and complexity, *C.R.Acad. Bulg. Sci.*, 60(12), 2007, 1271-1276 IF 0.106
7. A. Slavova, Traveling waves in biological cellular neural network models, *Jour. Non. Anal. And Appl. Math.* vol.1, No.1, 2008
8. P. Popivanov, A. Slavova, Smooth and nonsmooth solutions of several equations of mathematical physics and their cellular neural network realization, *Lecture Notes in Computer Science*, 5434 LNCS, 2009, 461-468
9. A. Slavova, P. Zecca, Pietro, Applications of equations of mathematical physics in studying Tsunami waves. *PLISKA, Stud. Math. Bulg.* 23, 159-174 (2014).
10. A. Slavova, M. Markova, CNN modelling of nano-inclusions. *PLISKA, Stud. Math.* 25, 183-192 (2015).
11. A. Slavova, R. Tetzlaff, Dynamics of hysteresis CNN with memristor synapses. *PLISKA, Stud. Math.* 26, 203-214 (2016).
12. E. Litsyn, A. Slavova, Control of chaotic behavior of integro-differential CNN model arising in piezoelectric material with nano-heterogeneities. *PLISKA, Stud. Math.* 26, 143-154 (2016).
13. A. Slavova, R. Tetzlaff, M. Markova, Local activity in memristor-based chaotic system model. *PLISKA, Stud. Math.* 29, 139-150 (2018).
14. A. Slavova, G. Bobeva, Edge of chaos in reaction-diffusion CNN models. *PLISKA, Stud. Math.* 29, 127-138 (2018).
15. A. Slavova, R. Tetzlaff, Mathematical Analysis of Memristor CNN, in: *Memristors - Circuits and Applications of Memristor Devices*, InTech, 2019
16. A. Slavova, Z. Zafirova, Zoya, P. Zecca, CNN modeling of a class of integro-differential equations. *PLISKA, Stud. Math.* 30, 171-184 (2019).
17. A. Slavova, G. Bobeva, Dynamics of PEM with nano-inhomogeneities via cellular nanoscale networks. *PLISKA, Stud. Math.* 30, 157-170 (2019)