

Венелин Любомиров Тодоров

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1. **Todorov V.**, Kandilarov J., Dimov I., Vulkov L.. High Accuracy Numerical Methods for a Parabolic System in Air Pollution Modelling (2019) Neural Computing and Applications, Springer, DOI:10.1007/s00521-019-04088-x, pp.1-16, Springer London, Online ISSN 1433-3058, **ISI IF:4.215, Q1 of Computer Science, Artificial Intelligence, Rank 15 of 132** (2x25=50 точки)
2. Y. Dimitrov, R. Miryanov, **V. Todorov**, Asymptotic expansions and approximations for the Caputo derivative, Computational and Applied Mathematics, 1-24, **2018**, <https://doi.org/10.1007/s40314-018-0641-3>, Print ISSN 0101-8205, Online ISSN 1807-0302, **ISI IF: 0.863, Q3 of Applied Mathematics.** (2x15=30 точки)
3. **Todorov Venelin**, Ikononov Nikolay, Apostolov Stoyan, Dimov Ivan, Georgieva Rayna, Dimitrov Yuri. An Improved "Walk on Equations" Monte Carlo Algorithm for Linear Algebraic Systems, Recent Advances in Computational Optimization, 215-236, Springer, Cham, **2020, SJR:0.337** (2x10=20 точки)
4. **Venelin Todorov**, Ivan Dimov. Efficient Stochastic Approaches for Multidimensional Integrals in Bayesian Statistics, Large-Scale Scientific Computing (LSSC 2019), Springer International Publishing Switzerland, **accepted 2019, SJR:0.337** (2x10=20 точки).
5. **Venelin Todorov**, Ivan Dimov, Tzvetan Ostrowsky, and Zahari Zlatev. Advanced quasi-Monte Carlo algorithms for Multidimensional Integrals in Air Pollution Modelling, Proceeding of High Performance Computing Conference (HPC 2019), Springer International Publishing Switzerland, **accepted 2019, SJR:0.184.** (2x10=20 точки)
6. Tzvetan Ostrowsky, **Venelin Todorov**, Ivan Dimov, and Zahari Zlatev. Sensitivity Studies of an Air Pollution Model by Using Efficient Stochastic Algorithms for Multidimensional Numerical Integration, Proceeding of High Performance Computing Conference (HPC 2019), Studies in Computational Intelligence Springer series, **accepted 2019, SJR:0.184.** (2x10=20 точки)
7. **Venelin Todorov**, Ivan Dimov, Yuri Dimitrov, Tzvetan Ostrowsky and Rayna Georgieva. A Comparison of Quasi-Monte Carlo Methods Based on Faure and Sobol Sequences for Multidimensional Integrals in Air Pollution Modelling, Proceeding of AMITANS 2019 Conference (AMiTaNS'19), AIP Conference Proceedings, **SJR:0.165 accepted 2019.** (2x10=20 точки)

8. **Venelin Todorov**, Yuri Dimitrov and Ivan Dimov. Second Order Shifted Approximations for the First Derivative, Proceeding of High Performance Computing Conference (HPC 2019), Studies in Computational Intelligence Springer series Springer, **accepted 2019**, **SJR:0.184**. (2x10=20 точки)
9. Tzvetan Ostromsky, **Venelin Todorov**, Ivan Dimov, and Zahari Zlatev. Efficient Stochastic Algorithms for the Sensitivity Analysis Problem in the Air Pollution Modelling, Large-Scale Scientific Computing (LSSC 2019), Springer International Publishing Switzerland, **accepted 2019**, **SJR:0.337**. (2x10=20 точки)
10. **Todorov V.**, Dimov I, Dimitrov Y. Efficient Quasi- Monte Carlo Methods for Multiple Integrals in Option Pricing. AIP Conference Proceedings, 2025, 1, AIP, **2018**, DOI:10.1063/1.5064950, 110007-1-110007-10. **SJR:0.165** (2x10=20 точки)
11. **Todorov, V.**, Dimov, I.T., Monte Carlo Methods for Multidimensional Integration for European Option Pricing, 8th International Conference for Promoting the Application of Mathematics in Technical and Natural Sciences, AMiTaNS 2016, Albena, Bulgaria, 22-27 June 2016, AIP Conference Proceedings 1773, **2016**, 100009-1-100009-13, DOI: 10.1063/1.4965003, ISSN: 0094-243X, **SJR: 0.198**. (2x10=20 точки)
12. **Todorov Venelin**, Ikononov Nikolay, Dimov Ivan, Georgieva Rayna. A New Monte Carlo Algorithm for Linear Algebraic Systems Based on the "Walk on Equations" Algorithm. Proceedings of the 2018 Federated Conference on Computer Science and Information Systems, Annals of Computer Science and Information Systems, 15, IEEE, **2018**, ISSN:2300-5963, DOI:http://dx.doi.org/10.15439/978-83-949419-5-6, 257-260, IEEE Catalog Number: CFP1885N-ART (ART), ISBN 978-83-949419-5-6 (Web) (2x6=12 точки)
13. I. Dimov, J. Kandilarov, **V. Todorov**, L. Vulkov. Numerical Analysis of a Pollution and Environment Interaction Model: 9th International Conference, NMA 2018, Borovets, Bulgaria, August 20-24, 2018, Revised Selected Papers, In book: Numerical Methods and Applications, **January 2019**, DOI: 10.1007/978-3-030-10692-8_43, **SJR:0.295** (2x10=20 точки)
14. Ostromsky T, Dimov I, **Todorov V.**, Zlatev Z. Sensitivity Analysis of an Air Pollution Model by Using Quasi-Monte Carlo Algorithms for Multidimensional Numerical Integration: 9th International Conference, NMA 2018, Borovets, Bulgaria, August 20-24, 2018, Revised Selected Papers, In book: Numerical Methods and Applications, LNCS, volume 11189, ISSN 0302-9743, ISSN 1611-3349 (electronic), ISBN 978-3-030-10691-1, ISBN 978-3-030-10692-8 (eBook), DOI: 10.1007/978-3-030-10692-8_31, **January 2019**, **SJR:0.283**. (2x10=20 точки)
15. Dimitrov S., Dimov I., **Todorov V. (2017)** Latin Hypercube Sampling and Fibonacci Based Lattice Method Comparison for Computation of Multidimensional Integrals. In: Dimov I., Faragó I., Vulkov L. (eds) Numerical Analysis and Its Applications. NAA 2016. Lecture Notes in Computer Science, vol 10187, Springer, Cham, doi.org/10.1007/978-3-319-57099-0_32, pp. 302-310, **SJR (2015):0.252**. (2x10=20 точки)
16. I.T. Dimov, R. Georgieva, **V. Todorov**, Balancing of Systematic and Stochastic Errors in Monte Carlo Algorithms for Integral Equations, Numerical Methods and Applications (I. Dimov, S. Fidanova, and I. Lirkov - Eds.), LNCS 8962, Springer, **2015**, 44-51. DOI: 10.1007/978-3-319-15585-2_5, ISSN: 0302-9743, **SJR (2015): 0.252** (2x10=20 точки)
17. Dimov, I.T., **Todorov, V.**, Error Analysis of Biased Stochastic Algorithms for the Second Kind Fredholm Integral Equation, International Conference on Advanced

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18. Dimov I.,J. Kandilarov, **V. Todorov**, L. Vulkov. High-Order Compact Difference Schemes with Richardson Extrapolation for Semilinear Parabolic Systems. IN: Applications of Mathematics in Engineering and Economics, American Institute of Physics, 1789, 030002, (**2017**), DOI: 10.1063/1.4968448, **SJR: 0.198** (2x10=20 точки)
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 23. **Todorov V.**, Dimitrov V., Ts. I., Dimitrov Y.. Quasi-Monte Carlo Methods for Computation of Multidimensional Integrals Related to Bayesian Models in International Migration Forecasting. Journal Scientific and Applied Research, Volume 13, Konstantin Preslavsky Publishing House, **2018**, **EBSCO**, ISSN:1314-6289, 13-20
 24. **Todorov V.**, Dimitrov V., Ts. Iliyan. A Numerical Study On Quasi Monte Carlo Methods Based On Randomly Shifted Lattice Rule For Computation Of Multiple Integrals. Journal Scientific and Applied Research, Volume 13, Konstantin Preslavsky Publishing House, **2018**, **EBSCO**, ISSN:1314-6289, 21-30
 25. Chernogorova, T., **Todorov, V.**, Two finite difference schemes for a conjugate fluid- body problem, Proceedings of the Fifth International Conference FDM:TA 39;10, June 28 - July 2, **2010**, Lozenetz, Bulgaria, eds.: M. Koleva, L. Vulkov, University of Rousse, pp. 22-36, **2011**.
 26. Yuri Dimitrov, Radan Miryanov and **Venelin Todorov**: Quadrature formulas and taylor series of secant and tangent, pp. 23-40, Economic and computer sciences, issue 4, **2017**, Publishing house “Knowledge and business” Varna, ISSN 2367-7791.
 27. **V. Todorov**. Computing high dimensional integrals with Monte Carlo methods, Journal Scientific and Applied Research, Konstantin Preslavsky Publishing House, Vol.10, **2016**, **EBSCO**, 11-16, ISSN 1314-6289.

28. **Todorov, V.**, Dimov, I.: Applying an Almost Optimal Monte Carlo Algorithm for Integral Equations in Neuron Networks, 6th International Scientific Conference on Energy Efficiency and Agricultural Engineering, Ruse, **2015**, ISSN 1311-9974, pp.515-524.
29. **Todorov, V.**, Dzurov, V., Stojanov, P., Angelov, A. (2016). Latin Hypercube and Importance Sampling Algorithms for Multidimensional Integrals. Journal Scientific and Applied Research, 10, **2016**, **EBSCO**, 17-23, Konstantin Preslavsky Publishing House, ISSN 1314-6289.
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31. **V. Todorov**, I. Dimov, V. Dzurov, T. Stanchev, I. Tsvetkov, V. Dimitrov: A Numerical study on Hammersley sequence and Fibonacci based lattice rule for computation of multidimensional integrals, Journal Scientific and Applied Research, Vol. 12, 18-26, Konstantin Preslavsky Publishing House, ISSN 1314-6289, **2017**, **EBSCO**.
32. Angelova, N., M. Stoenchev, **V. Todorov**. Intuitionistic fuzzy conjunctions and disjunctions from second type., Issues in Intuitionistic Fuzzy Sets and Generalized Nets, Vol. 13, **2017**, 143–170. ISBN 978-83-61551-21-8
33. I. Dimov, J. Kandilarov, **V. Todorov**, L. Vulkov, Analysis and Realization of Compact Difference Schemes for Semilinear Parabolic Systems, Proceeding of the International Conference NMSCAA16, ISBN 978-619-7223-18-7, pp 17-21, **2016**.
34. **V. Todorov**, Some applications of Jensen inequality, Mathematical forum, IX, 1, **2007**, pp. 19-22, ISSN: 1311-297X.
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37. I. Dimov, R. Georgieva, **V. Todorov**. Error analysis of biased stochastic algorithms for a class of integral equations. Extended abstracts of ACOMIN conference, 4 pages, **2015**.
38. **Venelin Todorov**. Monte Carlo methods for multidimensional integrals, integral equations and applications. Abstract of Dissertations, 3, IICT-BAS, Sofia, **2017**, ISSN:1314-6351. URL: <http://www.iict.bas.bg/konkursi/2017/VTodorov/avtoreferat.pdf>.
39. Yuri Dimitrov, Ivan Dimov, **Venelin Todorov**, A novel method for improving the numerical solutions of fractional differential equations, BGSIAM'17 EXTENDED ABSTRACTS, 24-25, **2017**, ISSN: 1313-3357 (print), ISSN: 1314-7145 (electronic).
40. Stoyan Apostolov, Miroslav Stoenchev, **Venelin Todorov**, One parameter family of elliptic curves and the equation $x^4 + y^4 + kx^2y^2 = z^2$, BGSIAM'18 EXTENDED ABSTRACTS, 9-10, **2018**, ISSN: 1313-3357 (print), ISSN: 1314-7145 (electronic).

Публикации по конкурса за главен асистент общо 32 точки

1. **Venelin Todorov**, Ikonov Nikolay, Dimov Ivan, Georgieva Rayna. A New Monte Carlo Algorithm for Linear Algebraic Systems Based on the "Walk on Equations" Algorithm. Proceedings of the 2018 Federated Conference on Computer Science and Information Systems, Annals of Computer Science and Information Systems, 15, IEEE, **2018**, ISSN:2300-5963, DOI:<http://dx.doi.org/10.15439/978-83-949419-5-6>, 257-260, IEEE Catalog Number: CFP1885N-ART (ART), ISBN 978-83-949419-5-6 (Web) (видима в базите Scopus и Web of Science, 2x6=12 точки)
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3. **Todorov, V.**, Dimov, I.: Applying an Almost Optimal Monte Carlo Algorithm for Integral Equations in Neuron Networks, 6th International Scientific Conference on Energy Efficiency and Agricultural Engineering, Ruse, **2015**, ISSN 1311-9974, pp.515-524.
4. **V. Todorov**, I. Dimov, V. Dzurov, T. Stanchev, I. Tsvetkov, V. Dimitrov: A Numerical study on Hammersley sequence and Fibonacci based lattice rule for computation of multidimensional integrals, Journal Scientific and Applied Research, Vol. 12, 18-26, Konstantin Preslavsky Publishing House, ISSN 1314-6289, **2017, EBSCO**.
5. **Todorov, V.**, Dzurov, V., Stojanov, P., Angelov, A. (2016). Latin Hypercube and Importance Sampling Algorithms for Multidimensional Integrals. Journal Scientific and Applied Research, 10, **2016, EBSCO**, 17-23, Konstantin Preslavsky Publishing House, ISSN 1314-6289.

Публикации използвани в дисертацията общо 80 точки

1. I.T. Dimov, R. Georgieva, **V. Todorov**, Balancing of Systematic and Stochastic Errors in Monte Carlo Algorithms for Integral Equations, Numerical Methods and Applications (I. Dimov, S. Fidanova, and I. Lirkov - Eds.), LNCS 8962, Springer, **2015**, 44-51. DOI: 10.1007/978-3-319-15585-2_5, ISSN: 0302-9743, **SJR (2015): 0.252** (2x10=20 точки)
2. Dimov, I.T., **Todorov, V.**, Error Analysis of Biased Stochastic Algorithms for the Second Kind Fredholm Integral Equation, International Conference on Advanced Computing for Innovation, AComIn 2015, Sofia; (Margenov S.,Angelova G.,Agre G. eds.), Studies in Computational Intelligence 648, **2016**, 3-16. Springer Verlag. DOI: 10.1007/978-3-319-32207-0_1, ISSN: 1860-949X, **SJR: 0.187** (2x10=20 точки)
3. **Todorov, V.**, Dimov, I.T., Monte Carlo Methods for Multidimensional Integration for European Option Pricing, 8th International Conference for Promoting the Application of Mathematics in Technical and Natural Sciences, AMiTaNS 2016, Albena, Bulgaria, 22-27 June 2016, AIP Conference Proceedings 1773, **2016**, 100009-1-100009-13, DOI: 10.1063/1.4965003, ISSN: 0094-243X, **SJR: 0.198**. (2x10=20 точки)
4. Dimov I.,J. Kandilarov, **V. Todorov**, L. Vulkov. High-Order Compact Difference Schemes with Richardson Extrapolation for Semilinear Parabolic Systems. IN: Applications of Mathematics in Engineering and Economics, American Institute of Physics, 1789, 030002, (**2017**), DOI: 10.1063/1.4968448, **SJR: 0.198** (2x10=20 точки)
5. **V. Todorov**. Computing high dimensional integrals with Monte Carlo methods, Journal Scientific and Applied Research, Konstantin Preslavsky Publishing House, Vol.10, **2016**, 11-16, ISSN 1314-6289.

Проекти общо 120 точки

1. Young scientists project of BAS, DFNP 17-88/28.07.2017 (Coordinator: Venelin Todorov, ИКТ-BAS) Efficient Numerical Methods with an Improved Rate of Convergence for Applied Computational Problems, 2017-2019 (20 точки)
2. Young scientists project of BAS, DFNP 91-A1/04.05.2016 (Coordinator: Venelin Todorov, ИКТ-BAS) Monte Carlo methods for multidimensional integrals, integral equations, linear systems and applications, 2016-2017 (20 точки)
3. Bulgarian National Fund of Science under Project DN 12/4-2017 "Advanced Analytical and Numerical Methods for Nonlinear Differential Equations with Applications in Finance and Environmental Pollution"(Coordinator: Miglena Koleva, Rousse University), 2017-2021 (10 точки)
4. Bulgarian National Fund of Science under Project DN 12/5-2017 "Efficient Stochastic Methods and Algorithms for Large-Scale Computational Problems" (Coordinator: Stefka Fidanova, ИКТ-BAS), 2017-2021 (10 точки)
5. Bulgarian National Science Fund under Bilateral Project DNTS/Russia 02/12-2018 "Development and investigation of finite-difference schemes of higher order of accuracy for solving applied problems of fluid and gas mechanics, and ecology". (10 точки)
6. Efficient Parallel Algorithms for Large-scale Scientific Computations, FNI I-02-20/2014 (Coordinator: Ivan Dimov, from 2016 - Stefka Fidanova, ИКТ-BAS), 2014-2017 (10 точки)
7. Development and study of new Monte Carlo methods for modeling of complex systems, DMU 03/61, 2011-2013 (Coordinator: Rayna Georgieva, ИКТ-BAS) (10 точки)
8. Advanced Computing for Innovation (AComIn) FP7 Capacity Programme, Research Potential of Convergence Regions, FP7-REGPOT-2012-2013-1, 316087, 2012-2015 (Project coordinator: Prof. DSc. Galya Angelova, ИКТ-BAS). (10 точки)
9. Information and Communication Technologies for a Single Digital Market in Science, Education and Security (ICTinSES), contract No D01-205/23.11.2018, financed by the Ministry of Education and Science in Bulgaria, 2019-now (10 точки)
10. Grant BG05M2OP001-1.001-0003, financed by the Science and Education for Smart Growth Operational Program(2014-2020) and co-financed by the EU through theEuropean structural and Investment funds, 2019-now. (10 точки)

Доклади на конференции

1. 9th International Conference on „Large-Scale Scientific Computations“ (LSSC 2013), Discussion on Monte Carlo Methods, Sozopol, Bulgaria, June 3 - 7, 2013, URL: http://parallel.bas.bg/Conferences/SciCom13/Scientific_Program.pdf.
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2. 8th International Conference on Numerical Methods and Applications: NMA'14, Borovetz, Bulgaria, August 20 – 24, 2014, URL: http://parallel.bas.bg/dpa/NMA_2014/Program-NMA-2014.pdf.
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3. International Conference on Monte Carlo Method and Applications: 10 th IMACS Seminar on Monte Carlo Methods (MCM 2015), Linz, AUSTRIA, July 6 - 10, 2015. URL: <http://www.mcm2015.jku.at/index.id=26.html>.
Venelin Todorov, Balancing of Systematic and Stochastic Errors in Monte Carlo Algorithms for Integral Equations.
4. *The seminar of Department of Parallel Algorithms, 13.10.2015, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences*, URL: <http://parallel.bas.bg/dpa/BG/seminars.htm>.
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9. 11th International Conference on “Large-Scale Scientific Computations” (LSSC 2017), Sozopol, Bulgaria, June 5 - 9, 2017, URL: <http://parallel.bas.bg/Conferences/SciCom17/program.html>.
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I. Dimov, J. Kandilarov, V. Todorov, L. Vulkov, Approach Based on HOC Difference Schemes for Semilinear Parabolic Systems of Atmosphere Modelling.
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Venelin Todorov, Ivan Dimov, Tz Ostromsky, R. Georgieva, Efficient Stochastic Approaches for Sensitivity Studies of an Eulerian Large-scale Air Pollution Model.
12. *PhD Defence, 3.10.2017, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences*, URL: http://www.iict.bas.bg/competitions_n_stepeni_archive.html.
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13. 12th Annual Meeting of the Bulgarian Section of SIAM December 20 - 22, 2017, Sofia, Bulgaria (BGSIAM’17), URL: http://www.math.bas.bg/IMIdocs/BGSIAM/docs/bgsiam_2017_proceedings.pdf
Yuri Dimitrov, Ivan Dimov, Venelin Todorov. Numerical Solutions of Ordinary Fractional Differential Equations with Singularities.
14. *The reporting session of Department of Information Modelling, 20.12.2017, Institute of Mathematics and Informatics, Bulgarian Academy of Sciences.*
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15. 10th Jubilee International Conference for Promoting the Application of Mathematics in Technical and Natural Sciences - AMiTaNS’18, 20 - 25 June 2018, Albena, Bulgaria, URL: <http://2018.eac4amitans.eu/>.
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16. International Conference on Numerical Methods and Applications: NMA18, Borovez, Bulgaria, 20.08.2018 - 24.08.2018, URL: <https://nma18.fmi.uni-sofia.bg/sites/default/files/NMA18-Program-Final.pdf>.
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17. International Conference on Numerical Methods and Applications: NMA18, Borovez, Bulgaria, 20.08.2018 - 24.08.2018, URL: <https://nma18.fmi.uni-sofia.bg/sites/default/files/NMA18-Program-Final.pdf>.
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19. *Seminar on Information Modelling, 04.10.2018, Institute of Mathematics and Informatics, Bulgarian Academy of Sciences.*
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20. *The reporting session of Department of Information Modelling, 21.12.2018, Institute of Mathematics and Informatics, Bulgarian Academy of Sciences.*
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Stoyan Apostolov, Miroslav Stoenchev, Venelin Todorov. One parameter family of elliptic curves and the equation $x^4 + y^4 + kx^2y^2 = z^2$.
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