IGOR N. KONSHIN

Curriculum Vitae

BUSINESS ADDRESS:

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PERSONAL DATA:

Date and place of birth:	June 10, 1962, Kinel, Kujbyshev region, Russia
Citizenship	Russia
Marital Status:	married

EDUCATION:

Ph.D. **Dorodnicyn Computing Centre**, Russian Academy of Sciences, 2009,
Computational Mathematics (01.01.07),
Title: Parallel solution methods for linear equations systems with SPD matrices on the
base of additive overlaping decomposition

M.Sc. **Moscow Institute of Physics and Technology**, Russia, 1985,
Department of Control and Applied Mathematics

PROFESSIONAL EXPERIENCE:

09/2018–present:	Sechenov University, Laboratory of mathematical modeling in medicine Senior Reseacher
02/2013–present:	Marchuk Institute of Numerical Mathematics of Russian Academy of Sciences, Moscow, Russia Senior Researcher
09/2011–present:	Moscow Institute of Physics and Technology, Moscow, Russia Senior Researcher
10/1992–present:	Dorodnicyn Computing Centre, Federal Research Center "Computer Science and Control", Russian Academy of Sciences, Moscow, Russia Researcher

RESEARCH INTERESTS:

Numerical linear algebra, parallel linear system solvers, mathematical modeling, computational fluid dynamics, high performance computing

EDITORIAL BOARDS:

- Russian Journal of Numerical Analysis and Mathematical Modelling, Managing Editor

Ph.D. THESIS REVIEWS:

1. "Software package for numerical simulation of a joint ocean-atmosphere system on massively parallel computers" by V.V. Kalmykov (INM RAS, Moscow, 2013)

2. "Numerical solutions of Stokes type equations with variable viscosity and applications" by P.P. Grinevich (Moscow State University, Moscow, 2011)

PEER REVIEWS:

Reviewer in scientific journals:

- Russian Journal of Numerical Analysis and Mathematical Modelling,

- Supercomputing Frontiers and Innovations,

- Computational Mathematics and Mathematical Physics,

- Communications in Computer and Information Science,

- Lecture Notes in Computer Sciences,

- Numerical Methods and Programming

BOOKS:

- *INMOST – a software platform and graphical environment for development of parallel numerical models on general meshes.* Lomonosov Moscow State Univ. Publ., Moscow, 2013, 144 p., ISBN: 978-5-211-06480-5 (jointly with Yu. Vassilevski, G. Kopytov, K. Terekhov)

JOURNAL ARTICLES:

1. Strategies with algebraic multigrid method for coupled systems, *Lobachevskii Journal of Mathematics* (2024), V. 45, 251-261 (jointly with K. Terekhov, Yu. Vassilevski)

2. Block algebraic multigrid method for saddle-point problems of various physics. *Lecture Notes in Computer Science* (2023), V. 14388, 17-34 (jointly with K. Terekhov)

3. Parallel implementation of multioperators-based scheme of the 16-th order for three-dimensional calculation of the jet flows, *Lecture Notes in Computer Science* (2022), V. 13708, 250-261 (jointly with M. Lipavskii)

4. Distributed parallel bootstrap adaptive algebraic multigrid method, *Lecture Notes in Computer Science* (2022), V. 13708, 92-111 (jointly with K. Terekhov)

5. Solution of large-scale black oil recovery problem in parallel using INMOST platform, *Communications in Computer and Information Science* (2021), V. 1510, 240-255 (jointly with K. Terekhov)

6. Parameters optimization of linear and nonlinear solvers in GeRa code, *Communications in Computer and Information Science* (2021), V. 1510, 212-226 (jointly with V. Kramarenko, G. Neuvazhaev, K. Novikov)

7. Sparse system solution methods for complex problems. *Lecture Notes in Computer Science* (2021), V. 12942, 53-73 (jointly with K. Terekhov)

8. Students' favorite parallel programming practices, *Communications in Computer and Information Science* (2020), Vol. 1331, 511-523

9. Parallel BIILU2-based iterative solution of linear systems in reservoir simulation: do optimal parameters exist? *Communications in Computer and Information Science* (2020), Vol. 1331, 74-85 (jointly with K. Nikitin, K. Terekhov, Yu. Vassilevski)

10. Mathematical and numerical modelling via INMOST software platform. *Mathematica Montisnigri* (2020), Vol. XLVII, 75-86 (jointly with K. Terekhov, Yu. Vassilevski)

11. Improving parallel efficiency of calculations in GeRa for complex hydrogeological problems, *Communications in Computer and Information Science* (2019), V. 1129, 265–277 (jointly with D. Bagaev, F. Grigoriev, I. Kapyrin, V. Kramarenko, A. Plenkin)

12. Efficiency of basic linear algebra operations on parallel computers, *Communications in Computer and Information Science* (2019), V. 1129, 26–38

13. An algebraic solver for the Oseen problem with application to hemodynamics. *Computational Methods in Applied Sciences* (2019), V. 47, 339–357 (jointly with M. Olshanskii, Yu. Vassilevski)

14. Efficiency estimation for the mathematical physics algorithms for distributed memory computers, *Communications in Computer and Information Science* (2019), V. 965, 63–75

15. Modeling groundwater flow in unconfined conditions of variable density solutions in dual-porosity media using the GeRa code, *Communications in Computer and Information Science* (2019), V. 965, 263–278 (jointly with I. Kapyrin, V. Kramarenko, F. Grigoriev)

16. Parallel block-diagonal preconditioner with projectors for diffusion equation, *Herald of Computer and Information Technologies* (2018), No. 11, 3–10 (jointly with V. K. Kramarenko, Yu. A. Kuznetsov)

17. Parallel computations in the hydrogeological computational code GeRa: organization and efficiency, *Numer. Meth. Progr.* (2018) V. 19, 356–367 (jointly with I. V. Kapyrin, G. V. Kopytov, V. K. Kramarenko)

18. Hierarchical domain representation in the AlgoWiki encyclopedia: From problems to implementations, *Communications in Computer and Information Science* (2018), V. 910, 3–15 (jointly with A. Antonov, A. Frolov, V. Voevodin)

19. LU factorizations and ILU preconditioning for stabilized discretizations of incompressible Navier-Stokes equations, *Numer. Linear Algebra Appl.* (2017), V. 24, N. 3, e2085 (jointly with M. Olshanskii, Yu. Vassilevski)

20. Scalable computations of GeRa code on the base of software platform INMOST, *Lecture Notes in Computer Science* (2017), V. 10421, 433–445 (jointly with I. Kapyrin)

21. Dynamic optimization of linear solver parameters in mathematical modelling of unsteady processes, *Communications in Computer and Information Science* (2017), V. 793, 54–66 (jointly with D. V. Bagaev, K. D. Nikitin)

22. Ani3D-extension of parallel platform INMOST and hydrodynamic applications, *Communications in Computer and Information Science* (2017) V. 793, 219–228 (jointly with V. Kramarenko, Y. Vassilevski)

23. Parallel computational models to estimate an actual speedup of analyzed algorithm. *Communications in Computer and Information Science* (2017), V. 687, 304–317

24. Parallel processing model for Cholesky decomposition algorithm in AlgoWiki project, *Supercomputing Frontiers and Innovations* (2016) V. 3, N. 3, 61–70 (jointly with A. Antonov, A. Frolov, H. Kobayashi, A. Teplov, Vad. Voevodin, Vl. Voevodin)

25. Software platform INMOST in the GeRa code to operate with the distributed mesh data. *Mathematica Montisnigri*, (2016) Vol. XXXVI, 27–44 (jointly with F. V. Grigoriev, I. V. Kapyrin)

26. Application of the parallel INMOST platform to subsurface flow and transport modelling, *Lecture Notes in Computer Science* (2016), V. 9574. 277–286 (jointly with I. Kapyrin, K. Nikitin, K. Terekhov)

27. The study of the structural properties of the Cholesky factorization algorithm: from the long-known facts to the new conclusions. *Vestnik UGATU* (2015), V. 19, N. 4 (70), 149–162 (jointly with A. V. Frolov, Vad. V. Voevodin, A. M. Teplov)

28. INMOST parallel platform: framework for numerical modeling, *Supercomputing Frontiers and Innovations* (2015) V. 2, N. 4, 55–66 (jointly with A. A. Danilov, K. M. Terekhov, Y. V. Vassilevski)

29. ILU preconditioners for nonsymmetric saddle-point matrices with application to the incompressible Navier-Stokes equations. *SIAM J. Sci. Comp.* (2015), V. 37, N. 5, A2171-A2197 (jointly with M. A. Olshanskii, Yu. V. Vassilevski)

30. Solution of ill conditioned symmetric SLAE for problems of building mechanics by parallel iterative methods, *Vestnik Nizhegor. Univ. Lobachevskogo* (2012), N. 4 (1), 238–246 (jointly with V. L. Yakushev, V. N. Simbirkin, A. V. Filimonov, P. A. Novikov, G. B. Sushko, S. A. Kharchenko)

31. Post-filtering of IC2-factors for load balancing in parallel preconditioning, *Comp. Math. Math. Phys.* (2009), V. 49, N. 6, 901–918 (jointly with I. E. Kaporin)

32. Load balancing of parallel block overlapped incomplete Cholesky preconditioning, *Lecture Notes in Computer Science* (2009), V. 5698, 304–315 (jointly with I. E. Kaporin)

33. Truncated Newton type solver with application to grid untangling problem, *Numer. Linear Algebra Appl.* (2004), V. 11, N. 5-6, 525–533 (jointly with V. A. Garanzha, I. E. Kaporin)

34. A parallel block overlap preconditioning with inexact submatrix inversion for linear elasticity problems, *Numer. Linear Algebra Appl.* (2002), V. 9, N. 2, 141–162 (jointly with I. E. Kaporin)

35. Parallel solution of symmetric positive definite systems based on decomposition into overlapping blocks, *Comput. Math. Math. Phys.* (2001), V. 41, N. 2, 481–493 (jointly with I. E. Kaporin)

36. Parallel solution of large sparse SPD linear systems based on overlapping domain decomposition, *Lecture Notes in Computer Science* (1999), V. 1662, 436–446 (jointly with I. E. Kaporin)

CHAPTERS IN BOOKS:

1. Post-filtering of IC factors for load balancing in parallel preconditioned CG solvers, In: *Numerical Geometry, Grid Generation, and High Performance Computing* (Eds. V. A. Garanzha, Yu. G. Evtushenko, B. K. Soni, N. P. Weatherill), In: Proc. of Int. Conf. NUMGRID/VORONOI-2008, Moscow, 10-13 June, 2008, M.: Folium, pp. 158–164 (jointly with I. E. Kaporin)

2. Parallel conjugate gradient preconditioning via incomplete Cholesky of overlapping submatrices. In: *Parallel Computational Fluid Dynamics 2003: Advanced Numerical Methods, Software and Applications* (Eds. B. Chetverushkin, A. Ecer, N. Satofuka, J. Periaux, P. Fox), Elsevier B.V., Amsterdam, 2004, pp. 81–88 (jointly with I. E. Kaporin)

3. Parallel solution of linear systems with the use of approximate factorization of overlapping blocks, In: *Mathematical Modeling: Problems and Results* (Eds. O. M. Belotserkovski, V. A. Gushchin), Nauka, Moscow, 2003, pp. 315–326, ISBN: 5-02-006202-2 (jointly with I. E. Kaporin)

4. Iterative solvers for coupled 3D incompressible flow problems, on vector-parallel computers and MPPs, In: *Solution Techniques for Large-Scale CFD Problems* (Ed. W. G. Habashi). John Wiley and Sons, New York, 1995, pp. 83–88 (jointly with V. A. Garanzha et al.)

5. High order Pade-type approximation methods for incompressible 3D CFD problems on massively parallel computers, In: *Parallel Computational Fluid Dynamics: Implementations and Results using Parallel Computers* (Eds. A. Ecer, J. Periaux, N. Satofuka, S. Taylor), Elsevier Science B.V, 1995, pp. 199–205 (jointly with V. A. Garanzha et al.)

6. Optimization of multigrid methods of domain decomposition. In: *Numerical Methods and Software* (Ed. Yu. A. Kuznetsov), Dept. of Numer. Math. of USSR Acad. Sci., Moscow, 1990, 73–94

7. On application of the domain decomposition method to a quantum mechanics problem, In: *Adjoint Equations and Perturbation Algorithms* (Eds. V. I. Agoshkov and V. P. Shutyaev), Dept. of Numer. Math. of USSR Acad. Sci., Moscow, 1888, pp. 92–98 (jointly with S. A. Maliassov)

8. Implementation of domain decomposition methods for computers with matrix processors. In: *Methods of Mathematical Physics* (Ed. Yu. A. Kuznetsov), Dept. of Numer. Math. of USSR Acad. Sci., Moscow, 1988, pp. 40–62

OTHER PUBLICATIONS:

1. Software platform INMOST for distributed mathematical modeling, In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 23-24, 2019, Moscow, Russia)*, Moscow State University, 2019, pp. 210–211 (jointly with V. K. Kramarenko, K. M. Terekhov, Yu. V. Vassilevski)

2. Dynamic optimization of linear solver parameters in modeling non-stationary processes, In: *Abstracts of Lomonosov Readings 2019, Section of Computational Mathematics and Cybernetics (April 15-25, 2019)*, MaxPress, Moscow, 2019, pp. 19–20 (jointly with D.V. Bagaev)

3. Development of the GeRa integrated code to justify the safety of RW disposal facilities, Report collection of the V International Scientific Technical Conference: *Innovative Projects and Technologies for Nuclear Energy (October 2-5, 2018, Moscow)*, 2018, pp. 902–905 (jointly with F. V. Grigoriev, I. V. Kapyrin, G. V. Kopytov, V. V. Suskin)

4. Parallel block-diagonal preconditioner with projectors for the diffusion problem, In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 24-25, 2018, Moscow, Russia)*, Moscow State University, 2018, pp. 728–737 (jointly with V. K. Kramarenko, Yu. A. Kuznetsov)

5. Modeling groundwater flow in unconfined conditions of variable density solutions in dual-porosity media using the GeRa code, In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 24-25, 2018, Moscow, Russia)*, Moscow State University, 2018, pp. 321–333 (jointly with I. Kapyrin, V. Kramarenko, F. Grigoriev)

6. Efficiency estimation for the mathematical physics algorithms for distributed memory computers, In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 24-25, 2018, Moscow, Russia)*, Moscow State University, 2018, pp. 183–194

7. Ani3D-extension of parallel platform INMOST and hydrodynamic applications, In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 25-26, 2017, Moscow, Russia)*, Moscow State University, Moscow, 2017, pp. 19–28 (jointly with V. Kramarenko, Y. Vassilevski)

8. Dynamic optimization of linear solver parameters in mathematical modelling of unsteady processes, In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 25-26, 2017, Moscow, Russia)*, Moscow State University, Moscow, 2017, pp. 108–119 (jointly with D. V. Bagaev, K. D. Nikitin)

9. Three-dimensional hydrogeological modeling in GeRa code, In: *Proc. of VII scientific and practical conference on supercomputer technologies in the oil and gas industry. Mathematical methods, software and hardware (HPC-OilGas-2017)*, February 16-17, 2017, Moscow State University, Moscow, pp. 159–160 (jointly with I. V. Kapyrin, F. V. Grigoriev)

10. Solution of linear systems for multiphase flow problems in the framework of software platform INMOST, In: *Proc. of VII scientific-practical conference on supercomputer technologies in the oil and gas industry. Mathematical methods, software and hardware (HPC-OilGas-2017)*, February 16-17, 2017, MSU, Moscow, pp. 154–158 (jointly with D. V. Bagaev, K. D. Nikitin)

11. An algebraic solver for the Oseen problem with application to hemodynamics. Numerical Analysis & Scientific Computing Preprint Series, Department of Mathematics, University of Houston, *Preprint No. 50*, May, 2016, 19 p. (jointly with M. Olshanskii, Y. Vassilevski)

12. LU factorizations and ILU preconditioning for stabilized discretizations of incompressible Navier-Stokes equations. Numerical Analysis & Scientific Computing Preprint Series, Department of Mathematics, University of Houston, *Preprint No. 49*, May, 2016, 22 p. (jointly with M. Olshanskii, Y. Vassilevski)

13. Parallel computational models to estimate an actual speedup of analyzed algorithm. In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 26-27, 2016, Moscow, Russia)*, Moscow State University, Moscow, 2016, pp. 269–280

14. Modeling of multiphase flows based on parallel platform INMOST. In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 26-27, 2016, Moscow, Russia)*, Moscow State University, Moscow, 2016, pp. 288–293 (jointly with V. K. Kramarenko, K. D. Nikitin, K. M. Terekhov)

15. Development of INMOST software platform: dynamic grids, linear solvers and automatic differentiation, In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 26-27, 2016, Moscow, Russia)*, Moscow State University, Moscow, 2016, pp. 543–555 (jointly with D. V. Bagaev, A. I. Burachkovski, A. A. Danilov, K. D. Terekhov)

16. Geomigration and geofiltration modelling in the numerical code GeRa, In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 26-27, 2016, Moscow, Russia)*, Moscow State University, Moscow, 2016, pp. 133–139 (jointly with I. V. Kapyrin, F. V. Grigoriev)

17. Development of GeRa code based on parallel INMOST software platform using distributed meshes of general kind. In: *Proc. of XIV Int. Seminar Mathematical Models & Modeling in Laser Plasma Processes & Advanced Science Technologies (LPpM3)*, July 4-9, 2016, Moscow, p. 93 (jointly with Yu. V. Vassilevski, I. V. Kapyrin)

18. Modeling of multiphase flow based on platform INMOST: linear systems solution, In: *Proc. of VI scientific-practical conference on supercomputer technologies in the oil and gas industry. Mathematical methods, software and hardware (HPC-OilGas-2016)*, February 10-12, 2016, MSU, Moscow, pp. 83–87 (jointly with K. D. Nikitin)

19. Modeling of multiphase flow based on platform INMOST: nonlinear discretization scheme, In: *Proc. of VI scientific-practical conference on supercomputer technologies in the oil and gas industry. Mathematical methods, software and hardware (HPC-OilGas-2016)*, February 10-12, 2016, MSU, Moscow, pp. 80–83 (jointly with Yu. V. Vassilevski, V. K. Kramarenko, K. D. Nikitin)

20. New approaches to hydrogeological modeling in the GeRa code, In: *Proc. of the 10th anniversary scientific conf. Radiation Protection and Radiation Safety in Nuclear Technologies*, MEPhI publ., Obninsk, 2015, pp. 59–60 (jointly with A. V. Rastorguev, G. V. Kopytov, I. V. Kapyrin)

21. Investigation of the structural properties of the Cholesky decomposition algorithm: from long-known facts to new findings, In: *Proc. of Int. Sci. Conf. Parallel Computational Technologies (PaVT'2015)*, March 31 – April 2, 2015, Ekaterinburg, 2015, pp. 320–331 (jointly with A. V. Frolov, Vad. V. Voevodin, A. M. Teplov)

22. The structure of INMOST program platform and its usage for numerical modeling problems, In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 28-29, 2015, Moscow)*, Moscow State Univ. Publ., Moscow, 2015, pp. 104–109 (jointly with A. Danilov, K. Terekhov, Yu. Vassilevski)

23. Parallel linear systems solution for multiphase flow problems in the INMOST framework, In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 28-29, 2015, Moscow)*, Moscow State Univ. Publ., Moscow, 2015, pp. 96–103 (jointly with I. Kaporin, K. Nikitin, Yu. Vassilevski)

24. Hydrogeological modeling in radioactive waste disposal safety assessment using the GeRa code. In: *Proc. of the Int. Conf. Russian Supercomputing Days (September 28-29, 2015, Moscow)*, Moscow State University Publ., Moscow, 2015, pp. 122–132 (jointly with I. Kapyrin, G. Kopytov, K. Nikitin, Y. Vassilevski)

25. INMOST software platform based development of parallel numerical models on general meshes. In: *Proc. of XIII Int. Seminar "Mathematical Models & Modeling in Laser Plasma Processes & Advanced Science Technologies" (LPpM3) (May 30 – June 6, 2015, Petrovac, Montenegro)*, AP Print, Podgorica, Montenegro, 2015, p. 69 (jointly with Yu. V. Vassilevski, I. V. Kapyrin)

26. Development of parallel numerical models of multiphase flow based on software platform IN-MOST. In: Proc. of V Scientific-Practical Conference on Supercomputer Technologies in the Oil

and Gas Industry. Mathematical Methods, Software and Hardware (HPC-OilGas-2015). February 12-13, 2015, MSU, Moscow, pp. 71–75 (jointly with Yu. V. Vassilevski, K. D. Nikitin, K. M. Terekhov)

27. ILU preconditioners for non-symmetric saddle point matrices with application to the incompressible Navier-Stokes equations, Numerical Analysis & Scientific Computing Preprint Series, Department of Mathematics, University of Houston, *Preprint No. 34*, March, 2015, 25 p. (jointly with M. A. Olshanskii, Yu. V. Vassilevski)

28. Complex of parallel solver libraries LParSol, version 3, In: *Proc. of the XIV Int. Conf. High-Performance Parallel Computing on Cluster Systems (HPC 2014)*, PNRPU Publ. House, Perm, 2014, pp. 49–53 (jointly with Yu. G. Bartenev et al.)

29. Three-level MPI+TBB+CUDA parallel implementation of the block iterative algorithm for solution of SLAE for small-block unstructured sparse matrices, In: *Proc. of the Int. Supercomputing Conf. "Scientific Service on the Internet: a Search for the New Solutions" (September 17-22, 2012, Novorossiysk)*, Publ. House of Moscow State Univ., Moscow, 2012, pp. 522–528 (jointly with G. B. Sushko, S. A. Kharchenko)

30. A through parallel algorithm for constructing a second-order incomplete triangular factorization with dynamic selection of decomposition and ordering, In: *Proc. of the Int. Supercomputing Conf. "Scientific Service on the Internet: a Search for New Solutions" (September 17-22, 2012, Novorossiysk)*, Publ. House of Moscow State Univ., Moscow, 2012, pp. 491–494 (jointly with S. A. Kharchenko)

31. Solution of ill conditioned symmetric SLAE for problems of building mechanics by parallel iterative methods, In: *Proc. of the Int. Supercomputing Conf. Scientific Service on the Internet: an Exaflop Future (September 19-24, 2011, Novorossiysk)*, Publ. House of Moscow State Univ., Moscow, 2011, pp. 333–342 (jointly with V. L. Yakushev et al.)

32. Hierarchical block partitioning for parallel solution of linear systems with SPD matrices, In: *Proc. of III Int. Conf. on Matrix Methods in Mathematics and Applications (MMMA-2011)*, June 22-25, 2011, INM RAS, Moscow, pp. 82–83 (jointly with S. Kharchenko)

33. Overlap construction for symmetric linear systems parallel solution, In: *Proc. of Int. Conf. on Applied Mathematics and Computer Science dedicated to Academician A.A. Dorodnicyn's 100-th Birthday Anniversary*, Computing Centre of RAS, Moscow, December 7-11, 2010, pp. 117–118

34. Parallel algorithms for discrete optimization problems, In: *Proc. of Int. Conf. on Applied Mathematics and Computer Science dedicated to Academician A.A. Dorodnicyn's 100-th Birthday Anniversary*, Computing Centre of RAS, Moscow, December 7-11, 2010, pp. 223–225 (jointly with N. N. Galimyanova, A. L. Ignatyev, M. A. Posypkin, I. Kh. Sigal)

35. Parallel solution methods for linear equations systems with SPD matrices on the base of additive overlaping decomposition. *PhD Thesis*, Dorodnicyn Computing Centre of Russ. Acad. Sci., Moscow, 2009, 138 p.

36. Recursive scaling, permutation and 2x2-block splitting in ILU preconditionings, In: *Proc. of 2-nd International Conference on Matrix Methods and Operator Equations*, July 23-27, 2007, Moscow, pp. 32–34 (jointly with I. E. Kaporin)

37. Parallel nonlinear solver for large-scale geometrical optimization problems, In: *Proc. of Conference on Preconditioning methods for optimal control and constrained optimization problems, PMOCCO'2002*, October 23-25, 2002 (Eds. O. Axelsson, B. Polman, S. Gololobov), Univ. of Nijmegen, Nijmegen, The Netherlands, 2002, pp. 28–29 (jointly with V. A. Garanzha, I. E. Kaporin)

38. Benchmark problems in linear elasticity: parallel solution, *Tech. Report No. 0028*, Department of Mathematics, University of Nijmegen, The Netherlands, December 2000, 22 p. (jointly with I. E. Kaporin)

39. Comparison of algebraic solution methods on a set of benchmark problems in linear elasticity, *Final Report of the STW project NNS*, Vol. 4683, Univ. Nijmegen, Nijmegen, The Netherlands, 2000, 89 p. (jointly with O. Axelsson et al.)

40. Accuracy and efficiency of parallel implementation of matrix multiplication, In: *Proc. of 6th International IMACS Conference on Applications of Computer Algebra*, St. Petersburg, Russia, June 25-28, 2000, p. 11 (jointly with I. Kaporin)

41. Numerical experiments with industrial iterative solvers on massively parallel computers. I: Numerical experiments with the A_SPARSE solver on CRAY T3D, In: *Proc. of the High Performance Computing Symposium'95*, Phoenix, Arizona, USA, 1995, pp. 283–289 (jointly with I. V. Ibragimov et al.)

42. Numerical simulation and field measurements of air flow in clean rooms, In: *Proc. of 3rd conf. Associations for the Control of Micropollution, June 7-10, 1993, ASINKOM-93*, St. Petersburg, 1993, pp. 183–193 (jointly with V. A. Gushchin, I. N. Kononov, V. N. Konshin, S. A. Aleksandrov)

43. Numerical analysis of the air flow in a clean room, In: *Proc. of 2nd Conference of the Association of Micro-Pollution Control Engineers, October 12-16, 1992, ASINCOM-92*, Suzdal, 1992, pp. 136–140 (jointly with I. N. Kononov, V. N. Konshin)

44. Parallel numerical modeling of clean room air flows, In: *The third Russian-Japan joint symposium on CFD, Book of abstracts, Part II*, August 25-30, 1992, Vladivostok, Russia, pp. 121–122 (jointly with V. A. Gushchin, I. N. Kononov, V. N. Konshin)

45. A software package for assessing the aerodynamics of designed clean rooms, In: *Proc. of 4th Scientific Tech. Conf. Achievements and Prospects of Technological Ecology of Microelectronics in Clean Rooms*, June 25-26, 1992, MIET, Moscow, 1992, pp. 182–187 (jointly with V. A. Gushchin, I. N. Kononov, V. N. Konshin)

46. Block factorization methods on parallel computers for band SLAE of large dimension, In: *Organization of Supercomputing*, VINITI, Moscow, 1987, N.2184-B87, 7 p.

PROGRAMM REGISTRATION CERTIFICATES:

1. 2021, GeRa/V2 - a program for 3D geofiltration and geomigration modeling (certification passport No. 534-13.11.2021)

2. 2020, GeRa/V2 - a program for three-dimensional geofiltration and geomigration modeling (registration certificate No. 2020611976)

3. 2018, Geopolis - a program for geofiltration and geomigration modeling (certification passport No. 458-26.12.2018)

4. 2018, GeRa/V2-University - program for three-dimensional geofiltration and geomigration modeling (registration certificate No. 2018615458)

5. 2018, GeRa/V1 - program for three-dimensional geofiltration and geomigration modeling (registration certificate No. 2018616066)

6. 2015, Parallel program code for solving three-dimensional filtering problems, version 1.0 (registration certificate No. 2015617399)

7. 2014, Program for efficient parallel solution of linear algebraic systems of discretization of geofiltration and geomigration of radionuclides, version 2.0 (registration certificate No. 2014619661)

8. 2009, PALP - parallel algorithm for solving linear programming problems (registration certificate No. 2009614914)

INTERNATIONAL CONFERENCES:

RJS CFD (1992), STLS CFD (1994), ParCFD (1995, 2000, 2003), PaCT (1999, 2009, 2017, 2021), IMACS ACA (2000), MMOE (2007), NumGrid (2008, 2012, 2014, 2016), Dorodnicyn'100 (2010), MMMA (2011), SSI (2011, 2012), HPCCS (2014), PPAM (2015), LPpM3 (2015, 2016), PCT (2015, 2018), RuSCDays (2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024), GRW NMMMGBS (2017, 2018, 2019), STC (2018), MMLSC (2018, 2019), RCW ALA (2019).

AWARDS:

1. The Appreciation Award in Recognition of Valuable Contribution at the 1-st International Conference "Russian Supercomputing Days, 2015" (September 28–29, 2015, Moscow) signed by the Chairman of the Conference Program Committee V.V. Voevodin

2. The Appreciation Award in Recognition of Valuable Contribution at the 8-th International Conference "Russian Supercomputing Days, 2022" (September 26–27, 2022, Moscow) signed by the Chairman of the Conference Program Committee V.V. Voevodin

3. The Appreciation Award in Recognition of Valuable Contribution at the 10-th International Conference "Russian Supercomputing Days, 2024" (September 23–24, 2024, Moscow) signed by the Chairman of the Conference Program Committee V.V. Voevodin

SUPERVISION OF M.Sc. THESIS:

Bagaev D. (MSU 2019), Burachkovski A. (MSU 2018)

TEACHING EXPERIENCE:

2019:   Associate Professor, Sechenov University. Russian–Chinese school. Course: "Introduction to Supercomputing" (in English), lectures and labs, 12 hours

2018–present:	Associate Professor, Sechenov University. Magistracy "Mathematics and Mechanics". Course: "Practical work on parallel computing", lectures and labs, 36 hours per semester
2018–present:	Associate Professor, Sechenov University. Magistracy "Mathematics and Mechanics". Course: "Optimization methods", lectures and seminars, 36 hours per semester
2018:	Assistant, Lomonosov Moscow State University, International Summer Supercomputer Academy. Track: "Capabilities of open source packages (Salome/OpenFOAM/Paraview) for solving of continuum mechanics problems". Course: "INMOST – software platform for distributed mathematical modeling" (jointly with K.M. Terekhov and V.K. Kramarenko), lectures and labs, 4 hours
2017:	Assistant, Lomonosov Moscow State University, International Summer Supercomputer Academy. Track: "Computational hydrodynamics on supercomputers". Course: "ANI3D extension of the parallel INMOST platform and hydrodynamic applications" (jointly with Yu.V. Vassilevsky and V.K. Kramarenko), lectures and labs, 4 hours
2016–present:	Associate Professor, Marchuk Institute of Numerical Mathematics of Russian Academy of Sciences. Doctorate. Course: "Parallel computing methods", lectures and labs, 32 hours per semester
2014–present:	Associate Professor, Moscow Institute of Physics and Technology, Department of Mathematical Foundations of Control. Magistracy. Course: "Parallel computing methods", lectures and labs, 64 hours per semester
2013:	Associate Professor, Moscow Institute of Physics and Technology, Department of Innovation and High Technology. Magistracy. Course: "Parallel and distributed computing", lectures, 16 hours per semester
2012:	Assistant, Lomonosov Moscow State University, International Summer Supercomputer Academy. Course: "Parallel algorithms of algebra and analysis and experience of supercomputer modeling", lectures, 12 hours
2012:	Associate Professor, Moscow Institute of Physics and Technology, Department of Problems of Physics and Energetics, Department of Mathematical Modeling of Physical Processes. Magistracy. Course: "Parallel computing methods", lectures and labs, 32 hours per semester
2011–2013:	Assistant, Moscow Institute of Physics and Technology, Department of Mathematical Foundations of Control. Magistracy. Course: "Parallel discrete optimization methods", lectures and labs, 64 hours per semester
2010–2012:	Assistant, Russian University of Transport, Course: "Parallel computing algorithms", lectures, 16 hours per semester

PUBLIC PROFILES:

1. www.scopus.com/authid/detail.uri?authorId=6506946313

2. www.researcherid.com/rid/F-4340-2017

3. `www.researchgate.net/profile/Igor_Konshin`

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