СПИСЪК НА ЦИТИРАНИЯ НА НАУЧНИТЕ ТРУДОВЕ

юни 2024 г.

чл.-кор. Светозар Димитров Маргенов
кандидат в конкурс за академици на БАН в област Природоматематически науки, научно направление Математически науки

Общ брой на представените цитирания: 908

- **S. Margenov, An application of parabolic and cubic splines to solution of mixed boundary value problems of fourth order on a rectangle, Serdica, Vol. 7, Sofia (1981), 211-216 (Russian)**
  In:

1. R. Bannerjee, Approximate inverse based multigrid solution of large parse linear systems, Math. Report 1-88, Lakehead University, Thunder Bay, Canada (1988)
2. R. Bannerjee, M. Benson, An approximate inverse based multigrid approach to the biharmonic problem, Int. J. Computer Math., Vol. 40 (1991), 201-210

- **R. Lazarov, P.S. Vassilevski, S. Margenov, Solving elliptic problems by the domain decomposition method using precondition matrices derived by multilevel splitting of finite element matrices, Proceedings of the 1st Int. Conf. on Supercomputing, Greece (1987), 826-835**
  In:

3. I. Georgiev, Iterative Methods for Non-Conforming Finite Elements, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2006 (in Bulgarian)
4. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements, PhD Thesis, Institute of Information and Communication Technologies, BAS, Sofia, 2011 (in Bulgarian)
5. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishin House “Prof. Marin Drinov”, Sofia, 2013 (In Bulgarian), ISBN: 978-954-322-625-2

- **S. Margenov, K. Georgiev, L. Hadjikov, M. Novakova, An effective approach for BEM application to friction contact problems, Proc. of the 9th Int. Conf. Boundary Elements, Vol. 2, W. Germany (1987), 439-445**
  In:

6. J.H. Kane, S. Saigal, Numerical Integration and Sparse Blocked Equation Solution Techniques for Large Scale Boundary Element Analysis, Solution of Superlarge Problems in Computational Mechanics (1989), 229-250
7. J. H. Kane, H. Wang, B. L. K. Kumar, Nonlinear thermal analysis with a boundary element zone condensation technique, Computational Mechanics, Vol. 7 (2) (1990), 107-122
8. J.H. Kane, B.L. K. Kumar, An arbitrary condensing, noncondensing solution strategy for large scale, multi-zone boundary element analysis, Computer Methods in Applied Mechanics and Engineering, Vol. 79 (2) (1990), 219–244
9. A. Gupta, H.E. Delgado, J.H. Kane, K.G. Prasad, Elasto-plastic boundary element analysis utilizing a zone condensation technique, Computers & Structures, Vol. 43, 3 (1992), 595–604
10. K.G. Prasad, J.H. Kane, Sparse blocked ordering and zone condensation in boundary element analysis, Engineering Analysis with Boundary Elements, Vol. 9, 2 (1992), 145–157

11. H. Wang, K. G. Prasad, J. H. Kane, Three dimensional boundary formulations for nonlinear thermal shape sensitivities, Computational Mechanics, Vol. 11 (2) (1993), 123-139
12. J.H. Kane, K.G. Prasad, Sparse Blocked Equation Solving Techniques in Boundary Element Analysis, Advances in boundary element techniques, Springer Verlag, 1993

- **P.S. Vassilevski, R. Lazarov, S. Margenov, Vector and parallel algorithms in iteration methods for elliptic problems, Proceedings of 18th Annual Conference of the Union of the Bulgarian Mathematicians, Albena (1989), 40-51**
  In:

13. Farago, J. Karatson, Numerical Solution of Nonlinear Elliptic Problems via Preconditioning Operators, NOVA Science, 2002
14. J. Karatson, I. Farago, Preconditioning operators and Sobolev gradients for nonlinear elliptic problems, Computers and Mathematics with Applications, Vol. 50 (7) (2005), 1077-1092
15. J. Karatson, I. Farago, Sobolev gradient preconditioning for the electrostatic potential equation, Vol. 50 (7) (2005), 1093-1104

- **K. Georgiev, S. Margenov, BEM realization on a computing system including a systolic processor, 10th Symposium on Algorithms, Proc. of Lectures, Stribske Pleso (1989), 91-93**
  In:

16. M. Pester, S. Rjasanov, A parallel version of the preconditioned conjugate gradient method for boundary element equations, NLAA, Vol. 2 (1) (1995), 1-16
17. M. Pester, S. Rjasanov, A parallel preconditioned iterative realization of the panel method in 3D, NLAA, Vol. 3 (1) (1996), 65-80

- **S. Margenov, Inverse-free multilevel methods I, Report 4, Bulgarian Academy of Sciences, Center of Informatics and Computer Technology, Sofia, Bulgaria (1989)**
  In:

18. B. Achchab, O. Axelsson, L. Laayouni and A. Souissi, An additive version of the AMLI method for isotropic linear elasticity problems, Proceedings of 2001 International Conference on Preconditioning Robust Iterative Solution Methods for Problems with Singularities, PRISM'01, Nijmegen, The Netherlands (2001), 73-76

- **V. Eijkhout, S. Margenov, Preconditioned iterative solution of spline finite element systems, Mathematica Balkanica, Vol.4 (1990), 350 – 367**
  In:

19. I. Lirkov, Circulant preconditioners for spline finite element elliptic systems, Comptes rendus de l'Academy bulgare des Sciences, 46 (3) (1993), 21-24

- **Lirkov, S. Margenov, Circulant preconditioning of second order up-wind approximation of advection problems, in Scientific Computation and Mathematical Modelling, S.M. Markov ed. (1993), 73-76**
  In:

20. K. Georgiev, Gradient algorithms for linear systems arrising from the air pollution model on MPS 38, in: Advances in Numerical Methods and Applications, I. Dimov, Bl. Sendov, P.S. Vassilevski eds., Sofia (1994), 111-119

- **Georgiev, A. Baltov, S. Margenov, HIPERGEOS benchmark problems related to bridge engineering applications, Project Report COP-94-0820-MOST (1994), available at http://www-math.sci.kun.nl/math/Copernicus**
  In:

21. A. Padiy, On a robust multilevel method applied for solving large-scale linear elasticity problems, Communications in Numerical Methods in Engineering, Vol. 15 (3) (1999), 153-165

22. O. Axelsson, A. Padiy, On a robust and scalable linear elasticity solver based on a saddle point formulation, International Journal for Numerical Methods in Engineering, Vol. 44 (6) (1999), 801-818
23. A. Padiy, On a parallel multilevel solver for linear elasticity problems, Num. Lin. Alg. Appl., Vol. 6(3) (1999), 171-188
24. A. Padiy, Reliable iterative methods for solving ill-conditioned algebraic systems, Ph.D. Thesis, KUN, The Netherlands, 2000
25. O. Axelsson, A. Padiy, On a two-level Newton-type procedure for solving nonlinear elasticity problems, International Journal for Numerical Methods in Engineering, Vol. 49 (12) (2000), 1479-1493
26. I. Lirkov, Parallel performance of an MPI solver for 3D elasticity problems, Numerical Methods and Applications, Springer LNCS 2542 (2003), 527-535
27. I. Lirkov, MPI solver for 3D elasticity problems, Mathematics and Computers in Simulation, Vol. 61, Issues 3–6 (2003), 509–516
28. I. Lirkov, Y. Vutov, M. Paprzycki, M. Ganzha, Benchmarking Performance Analysis of Parallel Solver for 3D Elasticity Problems, Large-Scale Scientific Computing, LNCS, Vol. 4818 (2008), 705-712
29. I. Lirkov, Y. Vutov, M. Ganzha, M. Paprzycki, Comparative Analysis of High Performance Solvers for 3D Elasticity Problems, Springer LNCS 5434 (2009), 392-399
30. Y. Vutov, Prallel Iterative Methods for Nonconforming Finite Elements, Ph.D. Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Sofia, 2015 (In Bulgarian)
31. Y. Vutov, Parallel Iterative Methods for Nonconforming Finite Elements, Abstracts of Dissertations, Institute of Information and Communication Technologies, BAS, 3/2015

- **S. Margenov, Upper bound of the constant in the strengthened C.B.S. inequality for FEM 2D elasticity equations, Numerical Linear Algebra with Applications, Vol. 1(1) (1994), 65 – 74**
  In:

32. B. Achchab, J.F. Maitre, Estimate of the constant in two strengthened CBS inequalities for FEM systems of 2D elasticity: Application to Multilevel methods and a posteriori error estimators, NLAA, Vol. 3 (2) (1996), 147-160
33. P.S. Vassilevski, On two ways of stabilizing the hierarchical basis multilevel methods, SIAM Review, 39 (1997), 18-53
34. M. Jung and J.F. Maitre, Some remarks on the constant in the strengthened C.B.S. inequality: application to h- and p-hierarchical finite element discretizations of elasticity problems, TU Chemnitz-Zwickau, Preprint SFB393/97-15 (1997)
35. M. Jung, J. F. Maitre, Some remarks on the constant in the strengthened CBS inequality: Estimate for hierarchical finite element discretizations of elasticity problems, Numerical Methods for Partial Differential Equations, Vol. 15 (4) (1999), 469-487
36. R. Blaheta, Adaptive composite grid methods for problems of plasticity, Mathematics and Computers in Simulation, 50(1999), 123-134
37. A. Padiy, Reliable iterative methods for solving ill-conditioned algebraic systems, Ph.D. Thesis, KUN, The Netherlands, 2000
38. B. Achchab, O. Axelsson, L. Laayouni and A. Souissi, An additive version of the AMLI method for isotropic linear elasticity problems, Proccedings of 2001 International Conference on Preconditioning Robust Iterative Solution Methods for Problems with Singularities, PRISM'01, Nijmegen, The Netherlands (2001), 73-76
39. B. Achchab, O. Axelsson, L. Laayouni, A. Souissi, Strengthened Cauchy-Bunyakowski-Schwarz inequality for a three dimensional elasticity system, Num. Lin. Alg. Appl., Vol. 8(3) (2001), 191-205
40. M. Pester, Bibliotheken zur Entwicklung paralleler Algorithmen– Basisroutinen fur Kommunikation und Grafik, Technische Universit¨at Chemnitz, Preprint SFB393/02-01, 2002

41. B. Achchab, S. Achchab, O. Axelsson, A. Souissi, Upper bound of the constant in strengthened CBS inequality for anisotropic linear partial systems, Department of Mathematics, University of Nijmegen, Report No 0112 (2002)
42. I. Gustafsson and G. Lingskog, On parallel solution of linear elasticity problems, Part II: Methods and some computer experiments, Numerical Linear Algebra with Applications, Vol. 9 (3) (2002) , 205 - 221
43. B. Achchab, S. Achchab, O. Axelsson, A. Souissi, Upper bound of the constant in strengthened C.B.S. inequality for systems of linear partial differential equations, Numerical Algorithms, Vol. 32 (2-4) (2003), 185-191
44. O. Axelsson, A survey of algebraic multilevel iteration (AMLI) methods, BIT Numerical Mathematics, Vol. 43 (5) (2003), 863-879
45. R. Blaheta, Nested tetrahedral grids and strengthened CBS inequality, Numerical Linear Algebra with Applications, Vol. 10 (7) (2003), 619-637
46. G. Bencheva, Parallel Algorithms for Separation of Variables and Factorization of Sparse Matrices, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2004 (In Bulgarian)
47. O. Axelsson, R. Blaheta, Two simple derivations of universal bounds for the CBS inequality constant, Applications of Mathematics, Vol. 49 (1) (2004), 57-72
48. Y. Notay, Algebraic multigrid and algebraic multilevel methods: a theoretical comparison, Numerical Linear Algebra with Applications, Vol. 12 (5-6) (2005), 419-451
49. R. Glowinski, J. He, A. Lozinski, J Rappaz, J. Wagner, Finite element approximation of multi-scale elliptic problems using patches of elements, Numerische Mathematik, Vol. 101 (4) (2005),
50. 663-687
51. J. Wagner, Finite Element Methods with Patches and Applications, Ecolle Polytechnique Federale de Lausanne, These No 3478, 2006
52. J. Kraus, Algebraic multilevel preconditioning of finite element matrices using local Schur complements, Numerical Linear Algebra with Applications, Vol. 13 (1) (2006) , 49-70
53. I. Georgiev, Iterative Methods for Non-Conforming Finite Elements, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2006 (In Bulgarian)
54. M. Neytcheva, On element-by-element Schur complement approximations, Linear Algebra and its Applications, Vol. 434, 11 (2011), 2308-2324
55. I. Gustafsson, G. Lindskog, On parallel solution of linear elasticity problems. Part III: higher order finite elements, Numerical Linear Algebra with Applications, Vol. 20 (5) (2013), 869–887
56. F. Gossler, Algebraische Mehrgitterverfahren mit F-Glättung, Diplom-Mathematiker, TU Berlin, D83, 2013
57. O. Axelsson, I. Gustafsson, A coarse–fine-mesh stabilization for an alternating Schwarz domain decomposition method, Numerical Linear Algebra with Applications, Vol. 26 (3) (2019), https://doi.org/10.1002/nla.2236
58. X. Xu, C. S. Zhang, A new analytical framework for the convergence of inexact two-grid methods, SIAM Journal on Matrix Analysis and Applications, Vol. 43 (1) (2022), https://doi.org/10.1137/21M140448X
59. D. Labropoulou, T. Labropoulos, P. Vafeas, D.M. Manias, On the Generalizations of the Cauchy-Schwarz-Bunyakovsky Inequality with Applications to Elasticity, ArXiv, (2024), https://doi.org/10.48550/arXiv.2312.03478

- **Lirkov, S. Margenov, On circulant preconditioning of elliptic problems in L-shaped domains, in Advances in Numerical Methods and Applications, in: I. Dimov, Bl. Sendov, P.S. Vassilevski eds., World Scientific (1994), 136-145**
  In:

60. R. H. Chan, M. K. Ng, Conjugate Gradient Methods for Toeplitz Systems, SIAM Review, Vol. 38 (3) (1996), 427-482
61. W.M. Pickering, P.J. Harley, An FFT-based preconditioner for linear advection-diffusion problems over a rectangle domain, in: Iterative Methods in Linear Algebra, S. Margenov, P.S. Vassilevski

eds., IMACS Series in Comp. Appl. Math. Vol. 3 (1996), 330-34

62. M. Ng, Preconditioning of elliptic domains by approximation in the transformed domain, BIT, 37 (1997), 885-900
63. G. Bencheva, Parallel Algorithms for Separation of Variables and Factorization of Sparse Matrices, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2004 (in Bulgarian)

- **Lirkov, S. Margenov, P.S. Vassilevski, Circulant block-factorization preconditioners for elliptic problems, Computing, Vol.53(1) (1994), 59-74**
  In:

64. M.K. Ng, R.H. Chan, Scientific applications of iterative Toeplitz solvers, Calcolo, Vol. 33 (3-4) (1996), 249-267
65. G. Fiorentino, S. Serra, Fast parallel solvers for elliptic problems, Computers and Mathematics with Applications, Vol. 32 (2) (1996), 61-68
66. G. Fiorentino, S. Serra, Preconditioners for (high order) elliptic problems, in: Iterative Methods in Linear Algebra, S. Margenov, P.S. Vassilevski eds., IMACS Series in Comp. Appl. Math. Vol. 3 (1996), 342-353
67. R.H. Chan, C.K. Wong, Sine transform based preconditioners for elliptic problems, Numerical Linear Algebra with Applications, Vol. 4 (5) (1997), 351-368
68. E. Castelnuovo, Federigo Enriques e Guido Castelnuovo, Sezione Scientifica, Bolletino U.M.I. (7) (1997), 227-235
69. S. Serra, Sulle proprieta spetrtraly di matrici precondizionate di Toepliz, Buletino della Unione Matematica Italiana A, Vol. 7 (Suppl. 11 part 2) (1997), 463-483
70. S. S. Capizzanoa, An ergodic theorem for classes of preconditioned matrices, Linear Algebra and its Applications, Vol. 282 (1998), 161–183
71. M. Ng, Preconditioning of elliptic domains by approximation in the transformed domain, BIT, 37 (1997), 885-900
72. S. S. Capizzano, Some theorems on linear positive operators and functionals and their applications, Numerical Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, Vol. 441 (2-3) (1998), 139-167
73. S. Serra, The rate of convergence of Toeplitz based PCG methods for second order nonlinear boundary value problems, Numerische Mathematik, Vol. 81 (3) (1999), 461-495
74. S. S. Capizzano, C. T. Possio, Spectral and structural analysis of high precision finite difference matrices for elliptic operators, Linear Algebra and its Applications, Vol. 293 (1999), 85–131
75. S. S. Capizzano, Locally X matrices, spectral distributions, preconditioning, and applications, SIAM Journal on Matrix Analysis and Applications, Vol. 21 (4) (2000), 1354-1388
76. S. S. Capizzano, Some theorems on linear positive operators and functionals and their applications, Computers & Mathematics with Applications, Vol. 39 (2000), 139–167
77. S. S. Capizzano, C. T. Possio, High-order finite difference schemes and Toeplitz based preconditioners for elliptic problems, Electronic Transactions on Numerical Analysis, Vol. 11 (2000), 55-84
78. S. S. Capizzano, C. T. Possio, Preliminary remarks on multigrid methods for circulant matrices, Numerical Analysis and Its Applications, Springer LNCS 1988 (2001), 152-159
79. S. Serra Capizzano, C. T. Possio, Finite element matrix sequences: the case of rectangular domains, Numerical Algorithms, Vol. 28 (1-4) (2001), 309-327
80. S. S. Capizzano, Spectral behavior of matrix sequences and discretized boundary value problems, Linear Algebra and its Applications, Vol. 337 (2001), 37–78
81. 72. S. Serra Capizzano, C. T. Possio, Preconditioning strategies for 2D finite difference matrix sequences, Electronic Transactions on Numerical Analysis, Vol. 16 (2003), 1-29
82. G. Bencheva, Parallel Algorithms for Separation of Variables and Factorization of Sparse Matrices, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2004 (in Bulgarian)
83. D. Brown, Preconditioners for Inhomogeneous Anisotropic Problems with Spherical Geometry in

Ocean Modelling, Thesis, Department of Mathematics, University of Reading, 2004
84. D. Bertaccini, G. H. Golub, S. Serra Capizzano, C. T. Possio, Preconditioned HSS methods for the solution of non-Hermitian positive definite linear systems and applications to the discrete convection-diffusion equation, Numerische Mathematik, Vol. 99 (3) (2005), 441-484
85. M. Schneider, D. Merkert, M. Kabel, International for Numerical Methods in Engineering, FFT-based homogenization for microstructures discretized by linear hexahedral elements, Vol. 109 (10)(2017), 1461–1489
86. Matti Schneider, Dennis Merkert, Matthias Kabel, FFT-based homogenization for microstructures discretized by linear hexahedral elements, International J. for Numerical Methods in Engineering, Vol. 109 (10) (2017), DOI: 10.1002/nme.5336,1461–1489
87. C. Rodrigo, F.J. Gaspar, L.T. Zikatanov, On the validity of the local Fourier analysis, Cornell University Library, arXiv:1710.00408v2, 2017
88. M. Schneider, Voxel-based finite elements with hourglass control in fast Fourier transform-based computational homogenization, International Journal for Numerical Methods in Engineering. Vol. 123 (24) (2022), 6286-6313, https://doi.org/10.1002/nme.7114

- **S. Margenov, P.S. Vassilevski, Algebraic multilevel preconditioning of anisotropic elliptic problems, SIAM J. Sci. Comp., V.15(5) (1994), 1026-1037**
  In:

89. O. Axelsson, M. Neytcheva, The algebraic multilevel iteration – Theory and applications, in: Proceedings of the Second International Colloquium in Numerical Analysis, D. Baynov, A. Kovachev eds. (1993), 12-23
90. M. Neytcheva, Arithmetic and communication complexity of preconditioning methods, Ph.D. Thesis, KUN, The Netherlands, 1995
91. S. Maliassov, Substructuring domain decomposition method for nonconforming approximations of elliptic problems with anisotropy, Technical Report ISC-95, Institute for Scientific Computation, Texas A&M University (1995)
92. Simon S. Clift, Horst D. Simon and Wei-Pai Tang, Spectral Ordering Techniques for Incomplete LU Preconditioners for CG Methods, Research Institute for Advanced Computer Science NASA Ames Research Center, RIACS Technical Report 95.20, 1995
93. I. Lirkov, Block Circulant Factorization for Second Order Elliptic Problems, Ph.D. Thesis, CLPP-BAS, Bulgaria, 1996 (in Bulgarian)
94. Y. Notay, An efficient multilevel preconditioner robust with respect to anisotropy, Report GANMN 96-03, ULB Brussels (1996)
95. I. Gustafsson, An incomplete factorization preconditioning method based on modification of element matrices, BIT, 36(1) (1996), 86-100
96. I. Gustafsson, G. Lindskog, Parallel algorithms for orthotropic problems, Numerical Linear Algebra with Applications, Vol. 3 (3) (1996), 185-203
97. A. Reusken, On a robust multigrid solver, Computing, Vol. 56 (3) (1996), 1436-5057
98. A. Reusken, A multigrid method based on incomplete Gaussian elimination, NLAA, Vol. 3 (5) (1996), 427-454
99. Z. Chen, R.E. Ewing, R.D. Lazarov, S. Maliassov, Y. A. Kuznetsov, Multilevel preconditioners for mixed methods for second order elliptic problems, NLAA, Vol. 3 (5) (1996), 427-454
100. A. Padiy, Multilevel iterative methods for anisotropic elliptic problems, PRISM'97, Proceedings of the Conference on Preconditioned Iterative Solution Methods for Large Scale Problems in Scientific Computations, KUN, The Netherlands (1997), 145-169
101. B. N. Khoromskij and G. Wittum, Robust Schur complement methods for strongly anisotropic elliptic equations, Numer. Lin. Alg. Appl., Vol. 6(8) (1999), 621-654
102. Y. Notay, A multilevel block incomplete factorization preconditioning, Applied Numerical Mathematics, 31 (1999), 209-225
103. O. Axelsson, A. Padiy, On the additive version of the Algebraic Multilevel Iteration Method for anisotropic elliptic problems, SIAM SciComp, 20 (5) (1999), 1807-1830
104. Y.M. Laevsky, On the structure of solutions to elliptic problems with strong anisotropy,

Springer, Siberian Mathematical Journal, Vol. 41 (3) (2000), 538-560
105. A. Padiy, Reliable iterative methods for solving ill-conditioned algebraic systems, Ph.D. Thesis, KUN, The Netherlands, 2000
106. J. Kraus, An algebraic preconditioning method for M-matrices: linear versus non-linear multilevel iteration, Numerical Linear Algebra with Applications, Vol. 9 (6-7) (2002) , 409-428
107. Y. Notay, Robust parameter-free algebraic multilevel preconditioning, Numerical Linear Algebra with Applications, Vol. 9 (6-7) (2002), 409-428
108. M. Jung, T. Todorov, On the Convergence Factor in Multilevel Methods for Solving 3D Elasticity Problems, Preprintreihe des Chemnitzer SFB 393, 2004
109. S Beuchler, Multilevel solvers for a finite element discretization of a degenerate problem, SIAM Journal on Numerical Analysis, Vol. 42 (3) (2004), 1342–1356
110. B. Khoromskij, G. Wittum, Numerical Solution of Elliptic Differential Equations by Reduction to the Interface, Springer, 2004, 316
111. I. Lirkov, Parallel performance of a 3D elliptic solver, Numerical Analysis and Its Applications, Springer LNCS 3401 (2005), 383-390
112. J. Kraus, Algebraic multilevel preconditioning of finite element matrices using local Schur complements, Numerical Linear Algebra with Applications, Vol. 13 (1) (2006) , 49-70
113. E. Bangtsson, Robust Preconditioning Based on the Finite Element Framework, Ph.D. Thesis, Uppsala University (2007)
114. N. Yavich, Multilevel preconditioners for strongly anisotropic problems, Ph.D. Thesis, University of Houston, 2009
115. E. Kikinzon, Non-conforming Mixed Finite Element Methods for Diffusion Equation, Ph.D. Thesis, Department of Mathematics, University of Houston, 2011
116. A Prokopenko, Multilevel Preconditioners and their Applications in Geoscience, Dissertation, Department of Mathematics, University of Houston, 2011
117. L. Mu, J. Wang, Y. Wang, X. Ye, A Computational Study of the Weak Galerkin Method for Second-Order Elliptic Equations, Cornell University Library, arXiv:1111.0618v1, 2011
118. J. Willems, Robust Multilevel Solvers for High-Contrast Anisotropic Multiscale Problems, RICAM Reports 2012-17, Linz, Austria, 2012
119. L. Mu, J. Wang, Y. Wang, X. Ye, A Computational Study of the Weak Galerkin Method for Second-Order Elliptic Equations, Numerical Algorithms (2012), DOI 10.1007/s11075-012-9651-1
120. J. Willems, Robust Multilevel Solvers for High-Contrast Anisotropic Multiscale Problems, J. Computational and Applied Mathematics, ISSN: 0377-0427, Vol. 251 (2013), 47–60
121. D. Green, X. Hu, J. Lore, L. Mu, M.L. Stowell, An Efficient High-order Numerical Solver for Diffusion Equations with Strong Anisotropy, Computer Physics Communications, Vol. 276 (2022), 108333
122. D. Green, X. Hu, J. Lore, L. Mu, M.L. Stowell, An Efficient High-Order Solver for Diffusion Equations with Strong Anisotropy on Non-Anisotropy-Aligned Meshes, SIAM Journal on Scientific Computing (2023), https://doi.org/10.1137/22M1500162
123. D. Green, X. Hu, J. Lore, L. Mu, M.L. Stowell, An Efficient High-Order Solver for Diffusion Equations with Strong Anisotropy on Non-Anisotropy-Aligned Meshes, SIAM Journal on Scientific Computing, Vol. 46 (2) (2024), https://doi.org/10.1137/22M1500162

- **S. Margenov, J. Maubach, Optimal multilevel preconditioning for local refinement along a line, Numerical Linear Algebra with Applications, Vol. 2(4) (1995), 317 – 334**
  In:

124. L. Mu, J. Wang, Y. Wang, X. Ye, A Computational Study of the Weak Galerkin Method for Second-Order Elliptic Equations, Numerical Algorithms (2012), DOI 10.1007/s11075-012-9651-1
125. F. Kickinger, Automatic mesh generation for 3D objects, Tech. Report 96-1, University of Linz, Institut fuer Mathematik (1996)
126. F. Kickinger, Algebraic multigrid solver for discrete elliptic second order problems, url = "citeseer.nj.nec.com/43581.html (1996)
127. A. C. Telea, Visualisation and simulation with object-oriented networks, Thesis, TU Eindhoven,

The Netherlads, 2000

- **I. Lirkov, S. Margenov, L. Zikatanov, Circulant block-factorization preconditioners for anisotropic elliptic problems, CAM Rep. 95-39 UCLA, 1995**
  <u>In</u>:

128. M. K. Ng, Preconditioning of elliptic problems by approximation in the transform domain, BIT Numerical Mathematics, Vol. 37 (4) (1997), 885-900

- **R. Ewing, O. Iliev, S. Margenov, P. Vassilevski, Numerical study of three multilevel preconditioners for solving 2D unsteady Navier-Stokes equations, Computer Methods in Applied Mechanics and Engineering, Vol. 121 (1-4) (1995), 177-186**
  <u>In:</u>

129. V. Barocas, R. Tranquillo, A finite element solution for the anisotropic biphasic theory of tissue-equivalent mechanics: The effect of contact guidance on isometric cell traction measurement, J. Biomechanical Engineering, Vol. 119 (3) (1997), 261-268

- **S. Margenov, Semi-coarsening AMLI algorithms for elasticity problems, in Proceedings of the Conference on Algebraic Multilevel Iteration Methods with Applications, June 13-15 (1996), University of Nijmegen, volume 2, 179-193**
  <u>In</u>:

130. M. Jung and J.F. Maitre, Some remarks on the constant in the strenghened C.B.S. inequality: application to h- and p-hierarchical finite element discretizations of elasticity problems, TU Chemnitz-Zwickau, Preprint SFB393/97-15 (1997)
131. A. Eppler, K. Bernert, Two-Stage Testing of Advanced Dynamic Subgrid-Scale Models for Large-Eddy Simulation on Parallel Computers, TU Kemniz, Sonderforschungsbereich 393, Parallele Numerische Simulation f□ur Physik und Kontinuumsmechanik, SFB393/99-13, 1999
132. M. Jung, T.D. Todorov, On the Convergence Factor in Multilevel Methods for Solving 3D Elasticity Problems, TU Kemniz, Sonderforschungsbereich 393, Parallele Numerische Simulation f□ur Physik und Kontinuumsmechanik, Preprint SFB393/04-13, 2004
133. M. Lymbery, Robust Balanced Semi-coarsening Multilevel Preconditioning of Bicubic FEM Systems, Springer LNCS 8352 (2014), 628-635

- **R.E. Ewing, S.D. Margenov, P.S. Vassilevski, Preconditioning of biharmonic equation by multilevel iterations, Mathematica Balcanica, vol. 10 (1996), 121-132**
  <u>In</u>:

134. J. Karatson, Sobolev space preconditioning of strongly nonlinear 4th order elliptic problems, Numerical Analysis and Its Applications, Springer LNCS, Vol. 1988 (2000), 459-467
135. Grand challenge problems in environmental modeling and remediation: Groundwater contaminant transport, Technical Report, ORNL/TM—13443 ON: DE98006496; TRN: 99:000800, 1999
136. T.D. Todorov, Isoparametrics of the finite element method, Ph.D. Thesis, Technical University of Gabrovo, 2001 (in Bulgarian)
137. I. Farago, J. Karatson, Numerical Solution of Nonlinear Elliptic Problems via Preconditioning Operators, NOVA Science, 2002
138. A. Markus, The conjugate gradient method for 4th order nonlinear elliptic problems, Annales Univ. Sci. Budapest, Vol. 46 (2003), 81–94
139. O. Axelsson, J. Karatson, Equivalent operator preconditioning for elliptic problem, Numerical Algorithms, V. 50 (3) (2009), 297-380

- **S. Margenov, L. Xanthis, L. Zikatanov, On the optimality of the semicoarsening AMLI algorithm, in Iterative Methods in Linear Algebra, II, IMACS Series in Computational and Applied Mathematics, New Jersey, USA,Vol.3 (1996), 270-279**
  <u>In</u>:

140. Z. Chen, R.E. Ewing, R.D. Lazarov, S. Maliassov, Y. A. Kuznetsov, Multilevel preconditioners for mixed methods for second order elliptic problems, NLAA, Vol. 3 (5) (1996), 427-454
141. P.S. Vassilevski, On two ways of stabilizing the hierarchical basis multilevel methods, SIAM Review, 39 (1997), 18-53
142. A. Eppler, K. Bernert, Two-Stage Testing of Advanced Dynamic Subgrid-Scale Models for Large-Eddy Simulation on Parallel Computers, TU Chemniz, Preprint SFB393/99-13, 1999
143. T. Apel, J. Schoeberl, Multigrid methods for anisotropic edge refinement, SIAM Journal on Numerical Analysis, 40 (2000), 1993-2010
144. A. Padiy, Reliable iterative methods for solving ill-conditioned algebraic systems, Ph.D. Thesis, KUN, The Netherlands, 2000
145. T. Apel, A.M. Saendig, S.I. Solov'ev, Computation of 3D vertex singularities for linear elasticity error estimates for a finite element method on graded meshes, Technische Universitaet Chemnitz, Sonderforschungsbereich 393, Numerische Simulation auf massiv parallelen Rechnern, Preprint SFB393/01-33, 2001
146. S. Grosman, Robust local problem error estimation for a singularly perturbed reaction-diffusion problem on anisotropic finite element meshes, Technische Universitaet Chemnitz, Sonderforschungsbereich 393, Numerische Simulation auf massiv parallelen Rechnern, Preprint SFB393/02-07, 2002
147. T. Apel, H. M. Randrianarivony, Stability of discretizations of the Stokes problem on anisotropic meshes, Mathematics and Computers in Simulation, Vol. 61 (3–6) (2003), 437–447
148. C. Mense, Konvergenzanalyse von algebraischen Mehr-Gitter-Verfahren fuer M-Matrizen, Von der Fakultaet II - Mathematik und Naturwissenschaften der Technischen Universitaet Berlin, Doktor der Naturwissenschaften genehmigte Dissertation, 2007
149. C. Mense, R. Nabben, On algebraic multi-level methods for non-symmetric systems–Comparison results, Linear Algebra and its Applications, 429 (10) (2008), 2567-2588
150. C. Mense, R. Nabben, On Algabraic Multilevel Methods for Non-Symmetric Systems-Convergence Results, Electronic Transactions on Numerical Analysis, 30 (2008), 323-345
151. Y.A. Erlangga, R. Nabben, Algebraic Multilevel Krylov Methods, SIAM Journal on Scientific Computing, Vol. 31 (5) (2009), 3417-3437
152. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishin House "Prof. Marin Drinov", Sofia, 2013 (In Bulgarian), ISBN: 978-954-322-625-2

- **T. Chan, S. Margenov, P. Vassilevski, Performance of block—ILU factorization preconditioners based on block--size reduction for 2D elasticity systems, SIAM J. Sci. Comp., 18 (5) (1997), 1355-1366**
  <u>In</u>:

153. P. Vanek, M. Brezina, R. Tezaur, Two-grid method for linear elasticity on unstructured meshes, SIAM Journal on Scientific Computing, Vol. 21 (3) (1996), 900-923
154. K. Georgiev, Implementation of the additive overlapping domain decomposition method to 3-D elasticity problems, Mathematica Balkanica, New Series, 10 (1997), 419-433
155. K. Georgiev, Parallel domain decomposition approach for 3D boundary value problems and an application on parallel computers, in: Recent Advances in Numerical Methods and Applications II, World Scientific (1999), 473-481
156. K. Georgiev, Parallel algorithm for 3D elasticity problems based on an overlapping DD preconditioner, Parallel Numerical Computation with Applications, Springer Science+Busisness Media (1999), 105-117
157. D. E. Keyes, Terascale Optimal PDE Simulations (TOPS), An Enabling Technology Center, Mathematics and Statistics Department, Old Dominion University Norfolk, Virginia, 2000
158. D. Y. F. Kastanya, Implementation of a Newton-Krylov iterative method to address strong non-linear feedback effects in FORMOSA-B BWR core simulator, Dissertation, North Carolina State University, Nuclear Engineering, 2002

159. X. Gal, A coupled geomechanics and reservoir flow model on parallel computers, Dissertation, Texas Digital Library, 2004
160. J. Kraus, S. Tomar, Multilevel Method for Discontinuous Galerkin Approximation of Three-dimensional Elliptic Problems, Lecture Notes in Computational Science and Engineering, 60 (2008), 155-164
161. K. Teranishi, P, Raghavan, J. Sun, P. Michaleris, An evaluation of limited-memory sparse linear solvers for thermo-mechanical applications, Numerical Methods in Engineering, Vol. 74, 11 (2008), 1690-1715

- **Lirkov, S. Margenov, L. Zikatanov, Circulant block-factorization preconditioning of anisotropic problems, Computing, Vol. 58(3) (1997), 245-258**
  In:

162. G. Bencheva, Parallel Algorithms for Separation of Variables and Factorization of Sparse Matrices, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2004 (in Bulgarian)
163. D. Brown, Preconditioners for Inhomogeneous Anisotropic Problems with Spherical Geometry in Ocean Modelling, Thesis, Department of Mathematics, University of Reading, 2004
164. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishing House “Prof. Marin Drinov”, Sofia, 2013 (In Bulgarian), ISBN: 978-954-322-625-2
165. S. Friedhoff, S. Mac Lachlan, A generalized predictive analysis tool for multigrid methods, Numer. Linear Algebra Appl., Vol. 22 (4) (2015), 618–647

- **S. Margenov, Semicoarsening AMLI algorithms for elasticity problems, Numerical Linear Algebra with Applications, 5 (1998), 347-362**
  In:

166. Y. Notay, Robust parameter-free algebraic multilevel preconditioning, Numerical Linear Algebra with Applications, Vol. 9 (6-7) (2002), 409-428
167. M. Jung, A. M. Matsokin, S. V. Nepomnyaschikh, Yu. A. Thachov, Multilevel preconditioning opearators on locally modified grids, Technische Univesitat Chemnitz, Report SFB393/0514, 2005
168. I. Pultarova, Two partial results on preconditioning using hierarchical bilinear finite elements, Faculty of Civil Engineering, Czech Technical University, Prague, 2006
169. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishin House “Prof. Marin Drinov”, Sofia, 2013
170. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Abstracts of Dissertations 4/2013, e-ISSN: 1314-6351, 2013
171. M. Lymbery, Robust Balanced Semi-coarsening Multilevel Preconditioning of Bicubic FEM Systems, Large-Scale Scientific Computing, LNCS 8353 (2014), 628-635

- **S. Margenov, P.S. Vassilevski, Algebraic two-level preconditioning of non-conforming FEM systems, Large-Scale Scientific Computations of Engineering and Environmental Problems, Notes on Numerical Fluid Mechanics, V 62, VIEWEG (1998), 239-248**
  In:

172. M. Jung, T. D. Todorov, On the Convergence Factor in Multilevel Methods for Solving 3D Elasticity Problems, Technical University Kemnitz, Sonderforschungsbereich 393, Parallele Numerische Simulation fuer Physik und Kontinuumsmechanik, 2004
173. M. Jung, A. M. Matsokin, S. V. Nepomnyaschikh, Yu. A. Thachov, Multilevel preconditioning opearators on locally modified grids, Technische Univesitat Chemnitz, Report SFB393/0514, 2005
174. I. Georgiev, Iterative Methods for Non-Conforming Finite Elements, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2006 (in Bulgarian)

175. M. Jung, T. D. Todorov, A Study of the Constant in the Strengthened Cauchy Inequality for 3D Elasticity Problems, Math. Balkanica, 2006

- **A. Georgiev, S. Margenov, BSR BILU preconditioning for 3D simulation of pile foundation systems in nonlinear media, Large-Scale Scientific Computations of Engineering and Environmental Problems, Notes on Numerical Fluid Mechanics, V 62, VIEWEG (1998), 219-228**
  <u>In</u>:

176. I. Gustafsson and G. Lingskog, On parallel solution of linear elasticity problems, Part II: Methods and some computer experiments, Numerical Linear Algebra with Applications, Vol. 9 (3) (2002) , 205 – 221

- **Lirkov, S. Margenov, M. Paprzycki, R. Owens, A shared memory parallel implementation of block circulant preconditioners, Large-Scale Scientific Computations of Engineering and Environmental Problems, Notes on Numerical Fluid Mechanics, V 62, VIEWEG (1998), 319-328**
  <u>In</u>:

177. M. Neytcheva, O. Axelsson, On a Schur complement approach for solving two-level finite element systems}, Large-Scale Scientific Computing, Springer LNCS 2179 (2002), 113-121
178. Gustafsson and G. Lingskog, On parallel solution of linear elasticity problems, Part II: Methods and some computer experiments, Numerical Linear Algebra with Applications, Vol. 9 (3) (2002) , 205 – 221

- **A. Georgiev, S. Margenov, M. Neytcheva, Multilevel algorithms for 3D simulation of nonlinear elasticity problems, Mathematics and Computers in Simulation, 50 (1999), 175-182**
  <u>In</u>:

179. I. Farago, J. Karatson, Numerical Solution of Nonlinear Elliptic Problems via Preconditioning Operators, NOVA Science, 2002
180. P. Boyanova, On Numerical Solution Methods for Block-Structured Discrete Systems, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 942, Acta Universitatis Upsalinensis Uppsala, 2012

- **I. Lirkov, S. Margenov, MPI parallel implementation of CBF preconditioning for 3D elasticity problems, Mathematics and Computers in Simulation, 50 (1999), 247-254**
  <u>In</u>:

181. S. Salapaka, An effective method for the solution of Lower Rank Extracted Systems and Analysis of the dynamics of a repeated impact oscillator, University of California, Santa Barbara, Dissertation, 2002
182. Chia-Lin Chu, Distributed Finite-Element Computation Using Message Passing Interface - MPI, Master's Thesis, Department Construction Engineering, 2001
183. J. Mackerle, FEM and BEM parallel processing, Engineering Computations (Swansea, Wales), Vol. 20 (3-4) (2003), 436-484
184. A. Mesgouez, Numerical study of mechanical wave propagation in a porous medium induced by an impulsional load, Thesis, a l'Universit´ d'Avignon et des Pays de Vaucluse, 2005
185. S. Salapaka, A. Peirce, Analysis of a novel preconditioner for a class of p-level lower rank extracted systems, Numerical Linear Algebra with Applications, Vol. 13 (6) (2006), 437-472
186. Z. Ya Jiang, Zhi-nong Z. Jun, Elasto-Plastic Dynamic Behaviour of a Free-Free Beam with an Initial Notch, Vibration and Shock,Vibration and Shock,26(10) (2007), 34-38
187. N. Xu-tao, F. Da-peng, Implementation of Structural Dynamic Response Parallel Computation Based on EBE Policy, Vibration and Shock, 26(10) (2007), 51 -55

188. Da-Peng Fan, De-Jun Sheng, Xu-Tao Nie, EBE element-by-element-PCG preconditioned conjugate gradients parallel computation；Finite element；Collaborative optimization, J. Mathematical Strength, 06/01 (2008), 437 -440

189. Y. Vutov, Prallel Iterative Methods for Nonconforming Finite Elements, Ph.D. Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Sofia, 2015 (In Bulgarian)

- **Tz. Kolev, S. Margenov, Two-level preconditioning of pure displacement non-conforming FEM systems, Numerical Linear Algebra with Applications, 6 (1999), 533-555**
  In:

190. A. A. Kalinkin, Yu. M. Laevsky, Preconditioning of grid Lame equations in the nonconforming finite element method,Russian Journal of Numerical Analysis and Mathematical Modelling,Vol. 22 (1) (2007), 39-62

191. M. Jung, T.D. Todorov, On the Convergence Factor in Multilevel Methods for Solving 3D Elasticity Problems, TU Kemniz, Preprint SFB393/04-13, 2004

- **Lirkov, S. Margenov, M. Paprzycki, Benchmarking performance of parallel computers using a 2D elliptic solver, in: Recent advances in numerical methods and applications, World scientific, Singapore, (1999), 464-472.**
  In:

192. G. Bencheva, Parallel Algorithms for Separation of Variables and Factorization of Sparse Matrices, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2004 (in Bulgarian)

- **S. Margenov, Displacement doecomposition-MIC(0) preconditioning of linear elasticity non-conforming FEM problems, 16th IMACS World Congress 2000, Lausanne, Proceedings, (2000), 107-4**
  In:

193. I. Georgiev, Iterative Methods for Non-Conforming Finite Elements, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2006 (in Bulgarian)

194. Y. Vutov, Prallel Iterative Methods for Nonconforming Finite Elements, Ph.D. Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Sofia, 2015 (In Bulgarian)

195. Y. Vutov, Parallel Iterative Methods for Nonconforming Finite Elements, Abstracts of Dissertations, Institute of Information and Communication Technologies, BAS, 3/2015

- **S. Margenov, P. Popov, MIC(0) DD preconditioning of FEM elasticity problems on non-structured meshes, in: A. Handlovicova et. al. (eds.), Algoritmy 2000, Proceedings, 15th Conference on Scientific Computing, Vysoke Tatry, Slovakia (2000), 245-253**
  In:

196. T. Huang, Y. Zhang, L. Li, W. Shao, S.-J. Lai, Modified incomplete Cholesky factorization for solving electromagnetic scatering problems, Progress In Electromagnetics Research B, Vol. 13 (2009), 41-58

197. Y. Zhang, T.-Z. Huang, Y.-F. Jing, L. Li, Flexible incomplete Cholesky factorization with multi-parameters to control the number of nonzero elements in preconditioners, Numerical Linear Algebra with Applications (2011), DOI: 10.1002/nla.784

- **T. Kolev, S. Margenov, AMLI Preconditioning of Pure Displacement Non-conforming Elasticity FEM Systems, Numerical Analysis and Its Applications, Springer LNCS, Vol. 1988 (2001), 482-490**
  In:

198. M. Buck, O. Iliev, H. Andrä, Multiscale finite element coarse spaces for the application to linear elasticity, Central European J. of Mathematics, Vol. 11 (4) (2013), 680-701
199. M. Buck, Overlapping Domain Decomposition Preconditioners for Multi-Phase Elastic Composites, Vom Fachbereich Mathematik der Technischen Universitat Kaiserslautern zur Verleihung des akademischen Grades Doktor der Naturwissenschaften Dissertation, 2013

- **O. Axelsson, S. Margenov: An optimal order multilevel preconditioner with respect to problem and discretization parameters. In Advances in Computations, Theory and Practice, Minev, Wong, Lin (eds.), Vol. 7 (2001), Nova Science: New York, pp. 2-18.**
<u>In</u>:

200. J. Synka, The effect of a minimum angle condition on the preconditioning of the pivot block arising from 2-level-splittings of Crouzeix-Raviart FE-spaces, Springer LNCS 4818 (2008), 105-112
201. N Kosturski, MIC (0) DD Preconditioning of FEM Elasticity Systems on Unstructured Tetrahedral Grids, Springer LNCS 4818 (2008), 688-695

- **O. Axelsson, S. Margenov, On multilevel preconditioners which are optimal with respect to both problem and discretization parameters, Computational Methods in Applied Mathematics, 3 (1) (2003), 6-22**
<u>In</u>:

202. I. Farago, J. Karatson, Numerical Solution of Nonlinear Elliptic Problems via Preconditioning Operators, NOVA Science, 2002
203. S. Beuchler, Multilevel solvers for a finite element discretization of a degenerate problem, SIAM Journal on Numerical Analysis, Vol. 42 (3) (2004), 1342–1356
204. E. Bangtsson, M. Neytcheva, Algebraic preconditioning versus direct solvers for dense linear systems as arising in crack propagation problems, Communications in Numerical Methods in Engineering, 21 (2005), 73–81
205. I. Georgiev, Iterative Methods for Non-Conforming Finite Elements, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2006
206. E. Bangtsson, Robust Preconditioning Based on the Finite Element Framework, Uppsala University (2007)
207. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements, Ph.D. Thesis, Institute of Information and Communication Technologies, BAS, Sofia, 2011 (in Bulgarian)
208. S. Xu, Power Grid Simulation with GPU-Accelerated Iterative Solvers and Preconditioners, Delft Institute of Applied Mathematics, Dissertation, 2011
209. S. Xu, W. Xue, K. Wang, H. X. Lin, Fast time domain simulation of power systems using multilevel preconditioners with adaptive reconstruction strategies, Simulation Modelling Practice and Theory, Vol. 25 (2012), 90–105
210. J. Willems, Robust Multilevel Solvers for High-Contrast Anisotropic Multiscale Problems, RICAM Reports 2012-17, Linz, Austria, 2012
211. G. Yu, J. Xu, L.T. Zikatanov, Analysis of a two-level method for anisotropic diffusion equations on aligned and nonaligned grids Numerical Linear Algebra with Applications (2012), DOI: 10.1002/nla.1847
212. S, Xu, W. Xue, K Wang, H.X. Lin, Fast time domain simulation of power systems using multilevel preconditioners with adaptive reconstruction strategies, Simulation Modelling Practice and Theory, Vol. 25 (2012), 90–105
213. A. Tavakoli, S. Jafari, New preconditioners for elliptic problems in multiresolution space, U.P.B. Sci. Bull., Series A, Vol. 74, Iss. 4 (2012), 29-38
214. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishin House “Prof. Marin Drinov”, Sofia, 2013 (In Bulgarian), ISBN: 978-954-322-625-2
215. J. Willems, Robust multilevel solvers for high-contrast anisotropic multiscale problems, J. Comput. Appl. Math., Vol. 251 (2013), 47–60, ISSN: 0377-0427

216. B. Borsos, Quasi-Newton type iterative solution of nonlinear elliptic PDEs with non-uniform monotonicity conditions, PhD Dissertation, Department of Analysis, Institute of Mathematics, Budapest University of Technology and Economics, 2021
217. B. Borsos, J. Karátson, Robust Iterative Solvers for Gao Type Nonlinear Beam Models in Elasticity, Computational Methods in Applied Mathematics, 2021, https://doi.org/10.1515/cmam-2020-0133
218. G. Meurant, Direct and Iterative Methods for Linear Systems, 2023, https://gerard-meurant.fr/book_2023.pdf
219. G. Meurant, Direct and Iterative Methods for Linear Systems, 2024, https://gerardmeurant.fr/book_2023.pdf

- **G. Bencheva, S. Margenov, Parallel incomplete factorization preconditioning of rotated linear FEM systems, Journal of Computational and Applied Mechanics, V.4(2) (2003), 105-117**
  In:

220. I. Georgiev, Iterative Methods for Non-Conforming Finite Elements, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2006
221. Y. Vutov, Parallel incomplete factorization of 3D NC FEM elliptic systems, Numerical Methods and Applications, Springer LNCS 4310 (2007), 114-121
222. J. Izadian, S.S. Jalalian, M. Jalili, A New Method for Solving 3D Elliptic Problem with Dirichlet or Neumann Boundary Conditions Using Finite Difference Method, Applied Mathematical Sciences, Vol. 6, 34 (2012), 1655 – 1666
223. I Gustafsson, G. Lindskog, On parallel solution of linear elasticity problems. Part III: Higher order finite elements, Chalmers Publcation Library, Preprint 93582, 2012
224. I Gustafsson, G Lindskog, On parallel solution of linear elasticity problems. Part III: Higher order finite elements, Numerical Linear Algebra with Applications, Vol. 20 (5) (2013), 869-887
225. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishin House "Prof. Marin Drinov", Sofia, 2013 (In Bulgarian), ISBN: 978-954-322-625-2
226. J. Zhang, A PETSc-based parallel implementation of Finite Element Method for elasticity problems, Mathematical Problems in Engineering, Hindawi, accepted, 2014, http:www.hindawi.com/journals/mpe/aip/147286/
227. Y. Vutov, Parallel Iterative Methods for Nonconforming Finite Elements, Ph.D. Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Sofia, 2015 (In Bulgarian)
228. Y. Vutov, Parallel Iterative Methods for Nonconforming Finite Elements, Abstracts of Dissertations, Institute of Information and Communication Technologies, BAS, 3/2015
229. J. Zhang, A PETSc-Based Parallel Implementation of Finite Element Method for Elasticity Problems, Mathematical Problems in Engineering, Vol. 2015 (2015), Article ID 147286, http://dx.doi.org/10.1155/2015/147286
230. X. Mengru, W. Xuem, Prediction of Regional Rainfall by Markov and ARIMA Combined, Computer Applications and Software, Vol. 36(3) (2019), 34-38
231. Z. Qian, Z. Jianfei, Parallel realization of elastoplastic finite element calculation based on SA-AMG, Computer Applications and Software, Vol. 36(3) (2019), 62-67
232. Z. Jinchan, L. Ye, H. Jie, Design and Development of Data Management System for Simulation Device of TMSR-SF1 Protection Systems, Computer Applications and Software, Vol. 36(3) (2019), 29-33

- **G. Bencheva, S. Margenov, Performance analysis of parallel MIC(0) preconditioning of rotated bilinear nonconforming FEM systems, Mathematica Balkanica, Vol. 17 (3-4) (2003), 319-335**

In:

233. I. Georgiev, Iterative Methods for Non-Conforming Finite Elements, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2006 (in Bulgarian)
234. A. A. Kalinkin, Yu. M. Laevsky, Preconditioning of grid Lame equations in the nonconforming finite element method, Russian Journal of Numerical Analysis and Mathematical Modelling, Vol. 22 (1) (2007), 39-62
235. Y. Vutov, Prallel Iterative Methods for Nonconforming Finite Elements, Ph.D. Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Sofia, 2015 (In Bulgarian)
236. Y. Vutov, Parallel Iterative Methods for Nonconforming Finite Elements, Abstracts of Dissertations, Institute of Information and Communication Technologies, BAS, 3/2015

- **G. Bencheva, S. Margenov, J. Stary, MPI implementation of a PCG solver for nonconforming FEM problems: overlapping of communications and computations, Technical Report 2006-023, Uppsala University, 2003**

In:

237. I. Lirkov, Y. Vutov, Comparative Analysis of High Performance Solvers for 3D Elliptic Problems, Proceedings of the International Multiconference on Computer Science and Information Technology (2007), 483–492
238. Y. Vutov, Parallel incomplete factorization of 3D NC FEM elliptic systems, Numerical Methods and Applications, Springer LNCS 4310 (2007), 114-121

- **R. Lazarov, S. Margenov, On two-level MIC(0) preconditioning of Crouzeix-Raviart nonconforming FEM systems, Springer Lecture Notes in Computer Science, Vol. 2542 (2003), 192-201**

In:

239. G. Bencheva, Parallel Algorithms for Separation of Variables and Factorization of Sparse Matrices, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2004 (in Bulgarian)
240. T. Rahman, X. Xu, R. Hoppe, Additive Schwarz methods for the Crouzeix-Raviart mortar finite element for elliptic problems with discontinuous coefficients, Numerische Mathematik, Vol. 101 (3) (2005), 551-572
241. I. Georgiev, Iterative Methods for Non-Conforming Finite Elements, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2006 (in Bulgarian)
242. Y. Vutov, Parallel incomplete factorization of 3D NC FEM elliptic systems, Numerical Methods and Applications, Springer LNCS 4310 (2007), 114-121
243. L. Marcinkowski, T. Rahman, Neumann–Neumann algorithms for a mortar Crouzeix–Raviart element for 2nd order elliptic problems, BIT, DOI 10.1007/s10543-008-0167-y (2008)
244. B. Li, X. Xie, BPX preconditioner for nonstandard finite element methods for diffusion problems, Cornell University Library, arXiv preprint arXiv:1410.5332, 2014
245. L Marcinkowski, T. Rahman, A Parallel Preconditioner for a FETI-DP Method for the Crouzeix–Raviart Finite Element, Domain Decomposition Methods in Science and Engineering XXI, Lecture Notes in Computational and Engineering, Vol. 98 (2014), 697-705
246. Y. Vutov, Prallel Iterative Methods for Nonconforming Finite Elements, Ph.D. Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Sofia, 2015 (In Bulgarian)
247. Y. Vutov, Parallel Iterative Methods for Nonconforming Finite Elements, Abstracts of Dissertations, Institute of Information and Communication Technologies, BAS, 3/2015
248. B. Li, X. Xie, BPX preconditioner for nonstandard finite element methods for diffusion problems, SIAM Journal on Numerical Analysis, 54(2) (2016), 1147–1168

- **R. Blaheta, S. Margenov, M. Neytcheva, Uniform estimate of the constant in the strengthened CBS inequality for anisotropic non-conforming FEM systems, Numerical**

Linear Algebra with Applications, Vol. 11 (4) (2004), 309-326

In:

249. J.K. Kraus, Algebraic multilevel preconditioning of finite element matrices based on element agglomeration, RICAM-Report No. 2004-01, 2004
250. I. Pultarova, Two partial results on preconditioning using hierarchical bilinear finite elements, Faculty of Civil Engineering, Czech Technical University, Prague, 2006
251. I. Georgiev, Iterative Methods for Non-Conforming Finite Elements, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2006 (in Bulgarian)
252. J. Brandts, S. Korotov, M. Krízek, J. Solc, On acute and nonobtuse simplicial partitions, Helsinki University of Technology, Institute of Mathematics, Research Report A503, 2006
253. J. Brandts, S. Korotov, M. Krízek, Simplicial finite elements in higher dimensions, Applications of Mathematics, Vol. 52 (3) (2007), 251-265
254. J Synka, The Effect of a Minimum Angle Condition on the Preconditioning of the Pivot Block Arising from 2-Level-Splittings of Crouzeix-Raviart FE-Spaces, Springer LNCS 4818 (2008), 105-112
255. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements, PhD Thesis, Institute of Information and Communication Technologies, BAS, Sofia, 2011 (in Bulgarian)
256. P. Boyanova, On Numerical Solution Methods for Block-Structured Discrete Systems, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 942, Acta Universitatis Upsalinensis Uppsala, 2012
257. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishin House “Prof. Marin Drinov”, Sofia, 2013 (In Bulgarian), ISBN: 978-954-322-625-2
258. S.K. Tomar, Robust algebraic multilevel preconditioning in H(curl) and H(div), Computers & Mathematics with Applications (2013), 1024-1046, ISSN: 0898-1221
259. S. K. Tomar, Robust Algebraic multilevel preconditioning in H(curl) and H(div), Cornell University Library, arXiv.org > math > arXiv:1301.3269 (2013)
260. S. Tomar, Algebraic multilevel preconditioning in three-dimensional H(div) space, RICAM-Report No. 2013-04, 2013
261. F. Gossler, Algebraische Mehrgitterverfahren mit F-Glättung, Diplom-Mathematiker, TU Berlin, D83, 2013
262. I. Pultarová, Hierarchical preconditioning for the stochastic Galerkin method: Upper bounds to the strengthened CBS constants, Computers & Mathematics with Applications, Vol. 71 (4) (2016), 949–964
263. I. Pultarová, Block and multilevel preconditioning for stochastic Galerkin problems with lognormally distributed parameters and tensor product polynomials, International Journal for Uncertainty Quantification, Vol. 7 (5), 2017, 441-462
264. I. Pultarová, M. Ladecký, Two-sided guaranteed bounds to individual eigenvalues of preconditioned finite element and finite difference problems, Numerical Linear Algebra with Applications, (2021), e2382, https://doi.org/10.1002/nla.2382
265. T. Gergelits, B.F. Nielsen, Z. Strakoš, Numerical approximation of the spectrum of self-adjoint operators in operator preconditioning, Numerical Algorithms, Vol. 91 (2022), 301-325
266. M. Ladecký, Advanced spectral methods for computational homogenization of periodic media, Ph.D. Thesis, Czech Technical University in Prague, Faculty of Civil Engineering, Department of Mathematics (2022), file:///C:/Users/98/Downloads/F1-D-2022-Ladecky-Martin-DT_MARTIN_LADECKY%20(1).pdf
267. T. Gergelits, B.F. Nielsen, Z. Strakoš, Numerical approximation of the spectrum of self-adjoint operators in operator preconditioning, Numerical Algorithms, Vol. 91 (2022), 301-325
268. L. Gaynutdinova, M. Ladecký, I. Pultarová, M. Vlasák, J. Zeman, Preconditioned discontinuous Galerkin method and convection-diffusion-reaction problems with guaranteed bounds to resulting spectra, Numerical Linear Algebra with Applications, (2024), e2549, https://doi.org/10.1002/nla.2549

- **P. Arbenz, S. Margenov, Parallel MIC(0) preconditioning of 3D nonconforming FEM systems, Iterative Methods, Preconditioning and Numerical PDEs, Proceedings (2004), 12-15**
  <u>In</u>:

269. A. A. Kalinkin, Yu. M. Laevsky, Preconditioning of grid Lame equations in the nonconforming finite element method, Russian Journal of Numerical Analysis and Mathematical Modelling, Vol. 22 (1) (2007), 39-62
270. I. Lirkov, Y. Vutov, Comparative analysis of high performance solvers for 3D elliptic problems, Proceedings of the International Multiconference on Computer Science and Information Technology, Wisla, Vol. 2 (2007), 483-492
271. Y Vutov, Parallel incomplete factorization of 3D NC FEM elliptic systems, Numerical Methods and Applications, LNCS 4310 (2007), 114-121

- **G. Bencheva, I. Georgiev and S. Margenov, Two-level preconditioning of Crouzeix-Raviart anisotropic FEM systems, Springer Lecture Notes in Computer Science, Vol. 2907 (2004), 76-84**
  <u>In</u>:

272. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements, PhD Thesis, Institute of Information and Communication Technologies, BAS, Sofia, 2011 (in Bulgarian)
273. P. Boyanova, On Numerical Solution Methods for Block-Structured Discrete Systems, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 942, Acta Universitatis Upsalinensis Uppsala, 2012

- **R. Blaheta, S. Margenov, M. Neytcheva, Robust optimal multilevel preconditioners for non-conforming finite element systems, Numerical Linear Algebra with Applications, 12 (2005), 495-514**
  <u>In</u>:

274. J.K. Kraus, Algebraic multilevel preconditioning of finite element matrices based on element agglomeration, RICAM-Report No. 2004-01, 2004
275. I. Pultarova, Two partial results on preconditioning using hierarchical bilinear finite elements, Faculty of Civil Engineering, Czech Technical University, Prague, 2006
276. I. Georgiev, Iterative Methods for Non-Conforming Finite Elements, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2006
277. J. Kraus, S. Tomar, Multilevel preconditioning of two-dimensional elliptic problems discretized by a class of discontinuous Galerkin methods, SIAM J. Sci. Comp., Vol. 30 (2) (2007), 648-706
278. J. Kraus, S. Tomar, A multilevel method for discontinuous Galerkin approximation of three-dimensional anisotropic elliptic problems, Numerical Linear Algebra with Applications, 15 (5) (2008), 417-438
279. J Synka, The Effect of a Minimum Angle Condition on the Preconditioning of the Pivot Block Arising from 2-Level-Splittings of Crouzeix-Raviart FE-Spaces, Springer LNCS 4818 (2008), 105-112
280. I. Pultarova, Preconditioning and a posteriori error estimates using h- and p-hierarchical finite elements with rectangular supports, Num. Lin. Alg. Appl., Volume 16 (5) (2009), 415 – 430
281. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements, PhD Thesis, Institute of Information and Communication Technologies, BAS, Sofia, 2011 (in Bulgarian)
282. J. K. Kraus, S. K. Tomar, Algebraic multilevel iteration method for lowest order Raviart–Thomas space and applications, Numerical Methods in Engineering, Vol. 86, 10 (2011), 1175–1196
283. P. Boyanova, On Numerical Solution Methods for Block-Structured Discrete Systems, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 942, Acta Universitatis Upsalinensis Uppsala, 2012

284. I. Pultarova, Preconditioning of the coarse problem in the method of balanced domain decomposition by constraints, Mathematics and Computers in Simulation, Vol. 82, 10, (2012), 1788–1798
285. F. Wang, J.R. Chen, P.Q. Huang, A multilevel preconditioner for the CR FEM for elliptic problems with discontinuous coefficients, Science China Mathematics, Vol. 55, 7 (2012), 1513-1526
286. G. Yu, J. Xu, L. T. Zikatanov, Analysis of a two-level method for anisotropic diffusion e,quations on aligned and nonaligned grids, Numerical Linear Algebra with Applications (2013), 832 – 851
287. S.K. Tomar, Robust algebraic multilevel preconditioning in H(curl) and H(div), Computers & Mathematics with Applications (2013), 1024-1046
288. S. K. Tomar, Robust Algebraic multilevel preconditioning in H(curl) and H(div), Cornell University Library, arXiv.org > math > arXiv:1301.3269 (2013)
289. S. Tomar, Algebraic multilevel preconditioning in three-dimensional H(div) space, RICAM-Report No. 2013-04, 2013
290. M Čertíková, L Gaynutdinova, I Pultarová, Multilevel a posteriori error estimator for greedy reduced basis algorithms, SN Applied Sciences, Vol. 2 (2020), 614, https://doi.org/10.1007/s42452-020-2409-9

- **K Georgiev, S Margenov, V.M. Veliov, Emission control in single species air pollution problems, Springer NATO Science Series IV, Vol. 54 (2005), 219-228**
  In:

291. L Zasaviţchi, Ecologia, stresul, adaptarea. Buletin thematic, Bibl. Şt. Centrală „Andrei Lupan", Acad. de Şt. a Moldovei, 2010
292. H Dawid, R.F. Hartl, P.M. Kort, Dynamic Models of the Firm with Green Energy and Goodwill, Control Systems and Mathematical Methods in Economics, Lecture Notes in Economics and Mathematical Systems book series, Vol. 687 (2018), 279-296

- **R.D. Lazarov, S.D. Margenov, CBS constants for multilevel splitting of graph-Laplacian and application to preconditioning of discontinuous Galerkin systems, Journal of Complexity, RICAM Report No. 2005-08,2005**

In:

293. J Kraus, M Wolfmayr, On the robustness and optimality of algebraic multilevel methods for reaction–diffusion type problems, Computing and Visualization in Science, 16 (2013), 15-32

- **I, Georgiev, J. Kraus, S. Margenov, Multilevel preconditioning of rotated bilinear non-conforming FEM problems, RICAM-Report No. 2006-03, 2006**
  In:

294. I. Pultarova, Two partial results on preconditioning using hierarchical bilinear finite elements, Faculty of Civil Engineering, Czech Technical University, Prague, 2006
295. I. Pultarova, Preconditioning and a posteriori error estimates using h- and p-hierarchical finite elements with rectangular supports, Numerical Linear Algebra with Applications, Vol. 16 (5) (2009), 415–430
296. I. Pultarova, Preconditioning of the coarse problem in the method of balanced domain decomposition by constraints, Mathematics and Computers in Simulation, Vol. 82 (10) (2012), 1788–1798

- **S. Margenov, J. Synka, Generalized aggregation-based multilevel preconditioning of Crouzeix-Raviart FEM elliptic problems, RICAM-Report Nr. 2006-23, Johann Radon Institute for Computational and Applied Mathematics, Linz, 2006**
  In:

297. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements, PhD Thesis, Institute of Information and Communication Technologies,BAS, Sofia, 2011 (in Bulgarian)

- **S. Margenov, Y. Vutov, Comparative analysis of PCG solvers for voxel FEM systems, Proceedings of the International Multiconference on Computer Science and Information Technology (2006), 591–598**

In:

298. C. Flaig, P. Arbenz, A scalable memory efficient multigrid solver for micro-finite element analyses based on CT images, Parallel Computing Volume 37, Issue 12 (2011), Pages 846–854
299. C. Flaig, P. Arbenz, A highly scalable matrix-free multigrid solver for FE analysis based on a pointer-less octree, Springer LNCS 7116 (2012), 498 - 506
300. Z. Yang, M. Ruess, S. Kollmannsberger, A. Düster, E. Rank, An efficient integration technique for the voxel-based finite cell method, International Journal for Numerical Methods in Engineering, Vol. 91, 5 (2012), DOI: 10.1002/nme.4269
301. M. Ruess, V. Varduhn, E. Rank, Z. Yosibash, A Parallel High-Order Fictitious Domain Approach for Biomechanical Applications, Parallel and Distributed Computing (ISPDC) (2012), 279 – 285

- **G Bencheva, S Margenov, J Starý, Parallel PCG solver for nonconforming FE problems: overlapping of communications and computations, Large-Scale Scientific Computing, Springer LNCS 3743 (2006), 646-654**
  In:

302. S. Choporov, Parallel Computing Technologies in the Finite Element Method, Third International Conference "High Performance Computing" HPC-UA (2013), 85 – 91

- **R. Blaheta, S. Margenov, M. Neytcheva, Aggregation-Based Multilevel Preconditioning of Non-conforming FEM Elasticity Problems, Applied Parallel Computing. State of the Art in Scientific Computing, NCS 3732 (2006), 847-856**
  In:

303. B. Ayuso, I. Georgiev, J. Kraus, L. Zikatanov, A Simple Preconditioner for the SIPG Discretization of Linear Elasticity Equations, Numerical Methods and Applications, LNCS 6046 (2011), 353-360
304. B. Ayuso, I. Georgiev, J. Kraus, L. Zikatanov, A subspace correction method for discontinuous Galerkin discretizations of linear elasticity equations, Cornell University Library, arXiv.org > math > arXiv:1110.5743, 2011
305. B. Ayuso, I. Georgiev, J. Kraus, L. Zikatanov, A subspace correction method for discontinuous Galerkin discretizations of linear elasticity equations, ESAIM: Mathematical Modelling and Numerical Analysis, Vol. 47(5) (2013), 1315-1333
306. I. Georgiev, J. Kraus, Preconditioning of Elasticity Problems with Discontinuous Material Parameters, Numerical Mathematics and Advanced Applications, Springer LNCS 2011 (2013), ISSN: 0302-9743,761-76
307. A. Dorostar, Analysis and Implementation of Preconditioners for Prestressed Elasticity Problems, Advances and Enhancements, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technologies 1580, 2017

- **I. Lirkov, S. Margenov, J. Wasniewski, Large-Scale Scientific Computing: 5th International Conference, LSSC 2005, Sozopol, Bulgaria, June 6-10, 2005, Revised Papers, LNCS, Vol. 3743, (2006), ISBN : 978-3-540-31994-8**
  In:

308. C. Lageman, K. Hüper; U. Helmke, P. Lang, LQG balancing: Intertwining balancing and sign iterations, 49th IEEE Conference on Decision and Control (CDC), IEEE Xplore: 22, (2010), https://ieeexplore.ieee.org/abstract/document/5717247
309. L.F.M. do Couto, Arquitetura de computação paralela para resolução de problemas de dinâmica dos fluidos e interação fluido-estrutura, Master's Dissertation, Escola Politécnica, São Paulo, (2016), https://doi.org/10.11606/D.3.2017.tde-21062017-113038

- **I. Lirkov, S. Margenov, J. Wasniewski, Large-Scale Scientific Computing: 5th**

International Conference, LSSC 2005, Sozopol, Bulgaria, June 6-10, 2005, Revised Papers, LNCS, Vol. 3743, (2006), ISBN : 978-3-540-31994-8
In:

- **P. Csomos, R. Cuciureanu, G. Dimitriu, I. Dimov, A. Doroshenko, I. Farago, K. Georgiev, A. Havasi, R. Horvath, S. Margenov, L. Moseholm, Tz. Ostromsky, V. Prusov, D. Syrakov, Z. Zlatev, Impact of climate changes on pollution levels in Europe, NATO Project CLG, Vol. 980505, 2006**
  In:

310. D. Syrakov, M. Prodanova, N. Miloshev, K. Ganev, G. Jordanov, V. Spiridonov, A. Bogatchev, Estimation of air pollution climatic values for Bulgaria, International Multidisciplinary Scientific GeoConference, SGE, Sofia Vol. 2, Surveying Geology & Mining Ecology Management (SGEM). (2009), 313-320
311. A. Todorova, D. Syrakov, G. Gadjhev, G. Georgiev, K.G. Ganev, M. Prodanova, N. Miloshev, V. Spiridonov, A. Bogatchev, K. Slavov, Grid computing for atmospheric composition studies in Bulgaria, Earth Sci Inform 3, (2010), 259-282, https://doi.org/10.1007/s12145-010-0072-1
312. D. Syrakov, M. Prodanova, N. Miloshev, K. Ganev, G. Jordanov, V. Spiridonov, A. Bogatchev, E. Katragkou, D. Melas, A. Poupkou, K. Markakis, Climate Change Impact Assessment of Air Pollution Levels in Bulgaria, Large-Scale Scientific Computing. LSSC 2009, Lecture Notes in Computer Science, Vol 5910, Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-12535-5_64
313. G. Dimitriu, R. Ştefănescu, I.M. Navon, Comparative numerical analysis using reduced-order modeling strategies for nonlinear large-scale systems, Journal of Computational and Applied Mathematics, Vol. 310 (2017), 32-43

- **R.D. Lazarov, S.D. Margenov, CBS constants for multilevel splitting of graph-Laplacian and application to preconditioning of discontinuous Galerkin systems, Journal of Complexity, 23 (2007), 498-515**
  In:

314. J. Kraus, S. Tomar, A Multilevel Method for Discontinuous Galerkin Approximation of Three-dimensional Elliptic Problems, Lecture Notes in Computational Science and Engineering, 60 (2008), 155-164
315. J. Kraus, S. Tomar, A multilevel method for discontinuous Galerkin approximation of three-dimensional anisotropic elliptic problems, Numerical Linear Algebra with Applications, 15 (5) (2008), 417-438
316. J. Kraus, S. Tomar, Multilevel Preconditioning of Two-dimensional Elliptic Problems Discretized by a Class of Discontinuous Galerkin Methods, SIAM J. Sci. Comput., 30(2), 684–706
317. M. Dryja, J. Galvis, M. Sarkis, Neumann-Neumann methods for a DG discretization of elliptic problems with discontinuous coefficients on geometrically nonconforming substructures, IMPA Preprint A634, Brazil,2009
318. M. Dryja, M. Sarkis, Feti-dp method for dg discretization of elliptic problems with discontinuous coefficients, IMPA Preprint A668, Brazil, 2010
319. E. Karer, J. K. Kraus, Algebraic multigrid for finite element elasticity equations: Determination of nodal dependence via edge-matrices and two-level convergence, International Journal for Numerical Methods in Engineering, Vol. 83, 5 (2010), 642–670
320. I Cho, PET Jorgensen, Toeplitz operators in Hilbert space over infinite graphs, Cornell University Library, arXiv preprint arXiv:1007.2896, 2010
321. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements, PhD Thesis, Institute of Information and Communication Technologies, BAS, Sofia, 2011 (in Bulgarian)
322. E. Karer, Subspace Correction Methods for Linear Elasticity, PhD Thesis, JKU Linz, 2011

323. M. Dryja, J. Galvis, M. Sarkis, Neumann-Neumann methods for a DG discretization on geometrically nonconforming substructures, Numerical Methods for Partial Differential Equations, Vol. 28 (4) (2012), 1194-1226
324. P. Boyanova, On Numerical Solution Methods for Block-Structured Discrete Systems, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 942, Acta Universitatis Upsalinensis Uppsala, 2012
325. M. Dryja, J. Galvis, M. Sarkis, A FETI-DP Preconditioner for a Composite Finite Element and Discontinuous Galerkin Method, SIAM Journal on Numerical Analysis, 51(1) (2013), 400-422, ISSN: 0036-1429
326. F. Gossler, Algebraische Mehrgitterverfahren mit F-Glättung, Diplom-Mathematiker, TU Berlin, D83, 2013
327. J. Kraus, M. Wolfmayr, On the robustness and optimality of algebraic multilevel methods for reaction–diffusion type problems, Computing and Visualization in Science, 16 (2013), 15-32
328. M. Dryja, J. Galvis, M. Sarkis, A Deluxe FETI-DP Preconditioner for a Composite Finite Element and DG Method, Computational Methods in Applied Mathematics, Vol. 15 (4) (2015), 465-482

- **S. Margenov, J. Synka, Generalized aggregation-based multilevel preconditioning of Crouzeix-Raviart FEM elliptic problems, Springer LNCS 4310 (2007), 91-99**
  In:

329. R. Blaheta, Application of Hierarchical Decomposition: Preconditioners and Error Estimates for Conforming and Nonconforming FEM, Springer LNCS 4818 (2008), 78-85
330. P. Boyanova, On Numerical Solution Methods for Block-Structured Discrete Systems, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 942, Acta Universitatis Upsalinensis Uppsala, 2012

- **S. Margenov, Numerical Methods for Systems with Sparse Matrices, Institute for Parallel Processing, Bulgarian Academy of Sciences, 2007, pp. 155 (in Bulgarian)**
  In:

331. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements,PhD Thesis, Institute of Information and Communication Technologies, BAS, Sofia, 2011 (in Bulgarian)
332. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishing House “Prof. Marin Drinov”, Sofia, 2013 (In Bulgarian), ISBN: 978-954-322-625-2
333. Y. Vutov, Parallel Iterative Methods for Nonconforming Finite Elements, Ph.D. Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Sofia, 2015 (In Bulgarian)
334. Y. Vutov, Parallel Iterative Methods for Nonconforming Finite Elements, Abstracts of Dissertations, Institute of Information and Communication Technologies, BAS, 3/2015
335. D. Slavchev, Composite Numerical Methods and Salable Algorithms, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2022 (In Bulgarian)

- **S. Margenov, P. Minev, On a MIC(0) preconditioning of non-conforming mixed FEM elliptic problems, Mathematics and Computers in Simulation, 76 (2007), 149-154**
  In:

336. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements,PhD Thesis, Institute of Information and Communication Technologies,BAS, Sofia, 2011 (in Bulgarian)

- **I. Georgiev, J. Kraus, S. Margenov, Multilevel preconditioning of 2D Rannacher-Turek FE problems; additive and multiplicative methods, Springer LNCS 4310 (2007), 56-64**
  In:

337. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements, PhD Thesis, Institute of Information and Communication Technologies, AS, Sofia, 2011 (in Bulgarian)
338. P. Boyanova, On Numerical Solution Methods for Block-Structured Discrete Systems, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 942, Acta Universitatis Upsalinensis Uppsala, 2012

- **S. Margenov, Y. Vutov, Preconditioning of voxel FEM elliptic systems, TASK Quaterly 11 (2007), 117-128**
  In:

339. P. Popov, Upscaling of Deformable Porous Media with Applications to Bone Modelling, Annual Meeting of the Bulgarian Section of SIAM, BGSIAM'09 Proceedings, 2010, 105-110

- **M. Dominiak, M. Ganzha, M. Gawinecki, W. Kuranowski, M. Paprzycki, S. Margenov, I. Lirkov, Utilizing Agent Teams in Grid Resource Brokering, International Transactions on Systems Science and Applications 3 (4) (2008), 296 – 306**
  In:

340. M. Kon-popovska, A. Misev, Grids in the near future: a technical and social review, ICT Innovations 2009, Springer, 2010, 421-428
341. A. Haquea, S. M. Alhashmia, R. Parthiba, A survey of economic models in grid computing, Future Generation Computer Systems, Vol. 27, 8(2011), 1056–1069
342. Z. Meng, J. Brooke, Negotiation Protocol for Agile Collaboration in e-Science, Conference Paper (2014), DOI: 10.13140/2.1.3779.5529
343. B. Javed, P. Bloodswortha, R. Rasoola, K. Munirc, O. Ranad, Cloud Market Maker: An automated dynamic pricing marketplace for cloud users, Future Generation Computer Systems, Vol. 54 (2016), 52-67

- **W. Kuranowski, M. Ganzha, M. Gawinecki, M. Paprzycki, I. Lirkov, S. Margenov, Forming and managing agent teams a cting as resource brokers in the grid-preliminary considerations, International Journal of Computational Intelligence Research, 4 (2008), 9-16.**
  In:

344. W. Nemec, M. Balzarova, How useful are sustainability indicators – Comparative Study between Sustainable Freshwater Fish Farming in South Island of New Zealand and Carinthia in Austria, 8-ICIT: 21-23/4/14 at UiTM-Sarawak ST-3: 5-S, 6-σ, QFD & other Quality Tools (2014), Paper #:03-1K
345. Y.S. Wo, Decision-Making Model on Real Estate Investment, Applied Mechanics and Materials, Vol. 157 – 158 (2012), 1230-1232

- **J. Kraus, S. Margenov and J. Synka, On the multilevel preconditioning of Crouzeix-Raviart elliptic problems, Numerical Linear Algebra with Applications, 15 (2008), 395-416**
  In:

346. R. Blaheta, Application of Hierarchical Decomposition: Preconditioners and Error Estimates for Conforming and Nonconforming FEM, Springer LNCS 4818 (2008), 78-85
347. Wang Feng Chen Jinru, An Additive Schwarz Preconditioner for P1 Nonconforming Quadrilateral Finite Element Methodsfor Elliptic Equations with Jump Coefficients, Mathematica Numerica Sinica (2009), 209-224
348. B Ayuso de Dios, L Zikatanov, Uniformly convergent iterative methods for discontinuous Galerkin discretizations, J. Sci. Comput., Vol. 40 (1-3) (2009), 4-36
349. F. Wang, J.-R. Chen, An Additive Schwarz Preconditioner for P1 Nonconforming Quadrilateral Finite Element Methodsfor Elliptic Equations with Jump Coefficients, Mathematica Numerica Sinica (2009), 209 – 224

350. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements,PhD Thesis, Institute of Information and Communication Technologies, BAS, Sofia, 2011 (in Bulgarian)
351. F, Wang, J. R. Chen, P. Q. Huang, A multilevel preconditioner for the C-R FEM for elliptic problems with discontinuous coefficients, Science China Mathematics, Vol. 55 (7) (2012), 1513-1526
352. C. Bahls, U. van Rienen, An application of the non-conforming Crouzeix-Raviart finite element method to space charge calculations, Proceedings of ICAP2012, University of Rostok, Rostock-Warnemünde, Germany (2012), 51-53
353. G. Yu, J. Xu, L.T. Zikatanov, Analysis of a two-level method for anisotropic diffusion equations on aligned and nonaligned grids, Numerical Linear Algebra with Applications, Vol. 20(5) (2013), 832-851
354. M. Racheva, New approaches in finite element analysis of elliptic problems, DSc, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishin House "Prof. Marin Drinov", Sofia, 2013 (In Bulgarian), ISBN 978-954-322-687-0
355. M. Lymbery, Robust Balanced Semi-coarsening Multilevel Preconditioning of Bicubic FEM Systems, Springer LNCS 8352 (2014), 628-635
356. B. Li, X. Xie, BPX preconditioner for nonstandard finite element methods for diffusion problems, Cornell University Library, arXiv:1410.5332, 2014
357. B Li, X Xie, BPX preconditioner for nonstandard finite element methods for diffusion problems, SIAM Journal on Numerical Analysis, 54(2) (2016), 1147–1168

- **I. Georgiev, J. Kraus, S. Margenov, Multilevel algorithms for Rannacher–Turek finite element approximation of 3D elliptic problems, Computing, Volume 82, 4 (2008), 217-239**
  In

358. O. Axelsson, Macro-elementwise preconditioning methods, Mathematics and Computers in Simulation, Vol. 82, 10 (2012), 1952–1963
359. F. Wang, J.R. Chen, P.Q. Huang, A multilevel preconditioner for the CR FEM for elliptic problems with discontinuous coefficients, Science China Mathematics, Vol. 55, 7 (2012), 1513-1526
360. S.K. Tomar, Robust Algebraic multilevel preconditioning in H(curl) and H(div), Cornell University Library, arXiv:1301.3269, 2013
361. S. Tomar, Algebraic multilevel preconditioning in three-dimensional H(div) space, RICAM-Report No. 2013-04, Linz, Austria, 2013
362. S.K. Tomar, Robust Algebraic multilevel preconditioning in H(curl) and H(div), Computers & Mathematics with Applications, Vol. 66 (6) (2013), 1024–1046
363. B. Achchab, K. Bouihata, A. Guessab, G. Schmeisserc, A general approach to the construction of nonconforming finite elements on convex polytopes, Applied Mathematics and Computation, Vol. 268 (2015), 916–923
364. B. Achchab, A. Guessab, Y. Zaim, A new class of nonconforming finite elements on convex polytopes, , Applied Mathematics and Computation, Vol. 271 (2015), 657–668
365. Y. Zaim, Approximation par éléments finis conformes et non conformes enrichis, Thèse de doctorat en Mathématiques appliquées, de l'universit´e de pau et des pays de l'adour, 2017

- **I. Georgiev, J. Kraus, S. Margenov, Multilevel Preconditioning of rotated bilinear nonconforming FEM problems, Comp. Math. Appl., 55 (10) (2008), 2280-2294**
  In:

366. I. Pultarova, Preconditioning and a posteriori error estimates using h- and p-hierarchical finite elements with rectangular supports, Num. Lin. Alg. Appl., Volume 16 (5) (2009), 415 – 430
367. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements, PhD Thesis, Institute of Information and Communication Technologies, BAS, Sofia, 2011 (in Bulgarian)
368. M. Köster, A. Ouazzi, F. Schieweck, S. Turek, P. Zajac, New robust nonconforming finite elements of higher order, Applied Numerical Mathematics, Vol. 62, 3 (2012), 166–184

369. P. Boyanova, On Numerical Solution Methods for Block-Structured Discrete Systems, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 942, Acta Universitatis Upsalinensis Uppsala, 2012
370. I. Pultarova, Preconditioning of the coarse problem in the method of balanced domain decomposition by constraints, Mathematics and Computers in Simulation, Vol. 82, 10 (2012), 1788–1798
371. M. Möller, On the design of non-conforming high-resolution finite element schemes, ECCOMAS 2012 – European Congress on Computational Methods in Applied Sciences and Engineering, e-Book Full Papers (2012), 4756-4764
372. M. Möller, Algebraic flux correction for nonconforming finite element discretizations of scalar transport problems, Computing, Vol. 95 (5) (2013), ISSN: 0010-485X, 425-448
373. S. Tomar, Algebraic multilevel preconditioning in three-dimensional H(div) space, RICAM-Report No. 2013-04, Linz, Austria, 2013
374. S.K. Tomar, Robust algebraic multilevel preconditioning in H(curl) and H(div), Computers & Mathematics with Applications (2013), 1024-1046, ISSN: 0898-1221
375. S.K. Tomar, Robust Algebraic multilevel preconditioning in H(curl) and H (div), Cornell University Library, arXiv:1301.3269, 2013

- **I. Georgiev, J. Kraus, S. Margenov, Multilevel Preconditioning of rotated bilinear nonconforming FEM problems, Comp. Math. Appl., 55 (10) (2008), 2280-2294**
  In:

376. Ya Sheng Wo, Decision-Making Model on Real Estate Investment, Applied Mechanics and Materials, Vol. (2012), 157 – 158

- **W. Kuranowski, M. Paprzycki, M. Ganzha, M. Gawinecki, I. Lirkov, S. Margenov,, Agents as Resource Brokers in Grids — Forming Agent Teams, Large-Scale Scientific Computing LNCS, Vol. 4818 (2008), 484-491**
  In:

377. S. Toor, Managing Applications and Data in Distributed Computing Infrastructures, IT Licentiate theses 2010-003, Dept. Information Technology, Uppsala University, Sweden, 2010
378. S. Toor, B. Mohn, D. Cameron, S. Holmgren, Case-Study for Different Models of Resource Brokering in Grid Systems, Dept. Information Technology, Uppsala University, Sweden, 2010

- **N. Kosturski, S. Margenov, Comparative analysis of mesh generators and MIC(0) preconditioning of FEM elasticity systems, Springer LNCS 4310 (2007), 74-81**
  In:

379. R. Marchand, J.-J. Berthelier, Kinetic modelling of particle distribution measurements in DEMETER, 35th EPS Conference on Plasma Phys. Hersonissos, June 2008 ECA Vol.32 (3) (2008), 1807-1810
380. Y. Vutov, Prallel Iterative Methods for Nonconforming Finite Elements, Ph.D. Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Sofia, 2015 (In Bulgarian)

- **J. Kraus, S. Margenov, Multilevel methods for anisotropic elliptic problems, Lectures on Advanced Computational Methods in Mechanics, de Gruyter Radon Series on Computational and Applied Mathematics Vol. 1, (2007), 47-88**
  In:

381. C. Pechstein, Finite and Boundary Element Tearing and Interconnecting Methods for Multiscale Elliptic Partial Differential Equations, Dissertation zur Erlangung des akademischen Grades Doktor der Technischen Wissenschaften, JK Universitat, Linz, 2008
382. T. Poonithara, A. Mathew, Domain Decomposition Methods for the Numerical Solution of Partial Differential Equations, Springer, Lecture Notes in Computational Science and Engineering, Vol. 61, 2008

383. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements,PhD Thesis, Institute of Information and Communication Technologies, BAS, Sofia, 2011 (in Bulgarian)
384. J. Willems, Robust Multilevel Solvers for High-Contrast Anisotropic Multiscale Problems, RICAM Reports 2012-17, Linz, Austria, 2012
385. C. Pechstein, Finite and Boundary Element Tearing and Interconnecting Solvers for Multiscale Problems, Lecture Notes in Computational Science and Engineering 90, Springer, 2013, ISSN: 1439-7358

- **I Georgiev, J Kraus, S Margenov, On the robustness of hierarchical multilevel splittings for discontinuous galerkin rotated bilinear fe problems. RICAM-Report 2008-09, 2008**
  In:

386. T. P. A. Mathew, Domain Decomposition Methods for the Numerical Solution of Partial Differential Equations, Lecture Notes in Computational Science and Engineering 61, 2008
387. C. Pechstein, Finite and Boundary Element Tearing and Interconnecting Solvers for Multiscale Problems, Lecture Notes in Computational Science and Engineering 90, Springer, 2013

- **P. Arbenz, S. Margenov, Y. Vutov, Parallel MIC(0) preconditioning of 3D elliptic problems discretized by Rannacher–Turek finite elements, Computers & Mathematics with Applications, Vol. 55 (10) (2008), 2197–2211**
  In:

388. N. Verheul, Partitioning of domains embedded in a regular grid, Utrecht University Repository, Faculty of Science Theses, 2013
389. B. Achchab, K. Bouihata, A. Guessab, G. Schmeisser, A general approach to the construction of nonconforming finite elements on convex polytopes, Applied Mathematics and Computation, Vol. 268 (2015), 916–923
390. B. Achchab, K. Bouihata, A. Guessa,b G. Schmeisser, A new class of nonconforming finite elements for the enrichment of Q1 element on convex polytope, Applied Mathematics and Computation, Vol. 271 (2015), 657–668
391. Y. Zaim, Approximation par éléments finis conformes et non conformes enrichis, Thèse de doctorat en Mathématiques appliquées, de l'universit´e de pau et des pays de l'adour, 2017

- **J. Kraus, S. Margenov, Generalized hierarchical bases for discontinuous Galerkin discretizations of elliptic problems with highly varying coefficients, Johann Radon Institute for Computational and Applied Mathematics: Department of Mathematics, 2008**
  In:

392. Е.И. Михайлова, Математическое модел ирование трехмерных электромагнитных пол ей в средах с микровключениями конформными и неконф ормными конечноэлементными методами, Институт нефтегазовой геологии и геофизики Сибирского отделения Российской Академии наук, Новосибирский государственный технический университет, Диссертация на соискание ученой степени кандидата физико-математических наук, 2015

- **J. Kraus, S. Margenov, Robust Algebraic Multilevel Methods and Algorithms, Radon Series on Computational and Applied Mathematics, 5, de Gruyter, 2009**
  In

393. M. Neytcheva, On element-by-element Schur complement approximations, Linear Algebra and its Applications (2010), doi:10.1016/j.laa.2010.03.031
394. S. Gross, A. Reusken, Numerical Methods for Two-phase Incompressible Flows, Springer Series in Computational Mathematics, 2011
395. P. Boyanova, Optimal Multilevel Methods for Nonconforming Finite Elements, PhD Thesis, Institute of Information and Communication Technologies, BAS, Sofia, 2011 (in Bulgarian)
396. X. He, M. Neytcheva, S. Serra Capizzano, On an augmented Lagrangian-based preconditioning of Oseen type problems, BIT Numerical Mathematics, V. 51, 4 (2011), 865-888

397. S. Andouze, O. Goubet, P. Poullet, A Multilevel Method for Solving the Helmhotz Equation: the Analysis of the One-Dimensiona Case, Numerical Analysis and Modelling, Vol. 8, 3 (2011), 365-372
398. M. Neytcheva, On element-by-element Schur complement approximations, Linear Algebra and its Applications, Vol. 434, 11 (2011), 2308–2324
399. S.E. Moore, A Discontinuous Galerkin Method for Solving Total Variation Minimization Proble, Masterarbeit zur Erlangung des akademischen Grades Diplomingenieur im Masterstudium Industriemathematik, Institut fuer Numerische Mathematik, JKU, Linz, Austria, 2011
400. Erwin Karer, Subspace Correction Methods for Linear Elasticity, PhD Thesis, JKU Linz, 2011
401. P. Crosetto, Fluid-Structure Interaction Problems in Hemodynamics: Parallel Solvers, Preconditioners, and Applications, These No 5109, École Polytechnique Fédérale de Lausanne, 2011
402. M. Kolmbauer, U. Langer, Robust Preconditioned MinRes-Solver for Time-Periodic Eddy Current Problems, NuMa-Report No. 2012-02, Johannes Kepler University Linz, Institute of Computational Mathematics,2012
403. P. Boyanova, On Numerical Solution Methods for Block-Structured Discrete Systems, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 942, Acta Universitatis Upsalinensis Uppsala, 2012
404. S. Maurus, A multi-dimensional PDE solver for option pricing based on the Heston model and sparse grids, Master's Thesis, Computational Science in Engineering, Technical University of Munich, 2012
405. J. Willems, Robust Multilevel Solvers for High-Contrast Anisotropic Multiscale Problems, RICAM Reports 2012-17, Linz, Austria, 2012
406. M. Kolmbauer, U. Langer, Comput. Methods Appl. Math. (2012), DOI: 10.2478/cmam-2012-0023
407. S. Maurus, A multi-dimensional PDE solver for option pricing based on the Heston model and sparse grids, Master's Thesis, Computational Science and Engineering,Technical University of Munich, 2012
408. W. Hackbusch, Tensor Spaces and Numerical Tensor Calculus, Springer Series in Computational Mathematics, Vol. 42 (2012), ISBN: 978-3-642-28026
409. X. Deng, H. Gao, A Multilevel Control Iterative Method for Nonlinear Partial Different Equations, Appl. Math. Inf. Sci. 7, No. 4 (2013), 1499-1503**,** ISSN: 1935-0090
410. H. Yang, Partitioned solvers for the fluid-structure interaction problems with a nearly incompressible elasticity model, Computing and Visualization in Science, Vol. 14 (5) (2012), 227-247
411. M. Buck, O. Iliev, H. Andrä, Multiscale finite element coarse spaces for the application to linear elasticity, Central European Journal of Mathematics (2013), 680-701, ISSN:1895-1074
412. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishin House "Prof. Marin Drinov", Sofia, 2013 (In Bulgarian), ISBN: 978-954-322-625-2
413. J. Willems, Robust multilevel solvers for high-contrast anisotropic multiscale problems, J. Comp. Appl. Math., Vol. 251 (2013), 47–60, ISSN: 0377-0427
414. M. Buck, O. Iliev, H. Andrä, Multiscale finite element coarse spaces for the application to linear elasticity, Central European Journal of Mathematics, Vol. 11 (2013), 680-701, ISSN:1895-1074
415. M. Kollmann, M. Kolmbauer, A preconditioned MinRes solver for time-periodic parabolic optimal control problems, Numerical Linear Algebra with Applications, Vol. 20 (5) (2013), 761–784
416. M Kollmann, M Kolmbauer, U Langer, M. Wolfmayr, W. Zulehner, A robust finite element solver for a multiharmonic parabolic optimal control problem, Computers & Mathematics with Applications, Vol. 65 (3) (2013), 469–486
417. M. Kolmbauer, U. Langer, A Robust Preconditioned MinRes Solver for Time-periodic Eddy Current Problems, Product Information, Computational Methods in Applied Mathematics, Vol.13(1) (2013), 1-20
418. M. Buck, Overlapping Domain Decomposition Preconditioners for Multi-Phase Elastic Composites. TU Kaiserslautern, Dr. rer. nat. Dissertation, 2013

419. K.P.S. Gahalaut, S.K. Tomar, J.K. Kraus, Computer Methods in Applied Mechanics and Engineering, Vol. 266 (1) (2013), 40–56
420. J. Willems, Robust multilevel methods for general symmetric positive definite operators, SIAM J. Numerical Analysis, 52(1) (2014), 103–124
421. U. Langer, M. Wolfmayr, Multiharmonic finite element analysis of a time-periodic parabolic optimal control problem, Journal of Numerical Mathematics, Vol. 21(2) (2013), 265-300
422. S.K. Tomar, Robust Algebraic multilevel preconditioning in H(curl) and H(div), Cornell University Library, arXiv preprint arXiv:1301.3269, 2013
423. U. Langer, H. Yang, Numerical Simulation of Fluid-Structure Interaction Problems with Hyperelastic Models I: A Partitioned Approach, RICAM-Report No. 2013-21, 2013
424. M. Lymbery, Robust Balanced Semi-coarsening Multilevel Preconditioning of Bicubic FEM Systems, Springer LNCS 8352 (2014), 628-635
425. U Langer, H Yang, Numerical Simulation of Fluid-Structure Interaction Problems with Hyperelastic Models: A Monolithic Approach, Cornell University Library, arXiv preprint arXiv:1408.3737, 2014
426. J Malek, Z Strakos, Preconditioning and the conjugate gradient method in the context of solving PDEs, SIAM Spotlights, ISBN: 978-1-61197-383-9, 2014
427. U Langer, H Yang, A note on robust preconditioners for monolithic fluid-structure interaction systems of finite element equation, Cornell University Library, arXiv preprint arXiv:1412.6845, 2014
428. U. Langer, A. Mantzaflaris, S.E. Moore, I. Toulopoulos, Multipatch Discontinuous Galerkin Isogeometric Analysis, RICAM-Report No. 2014-18, 2014
429. Z. Dostál, T. Kozubek, O. Vlach and T. Brzobohatý, Reorthogonalization-based stiffness preconditioning in FETI algorithms with applications to variational inequalities, Numerical Linear Algebra with Applications, DOI: 10.1002/nla.1994, 2015
430. S. Farouq, Performance comparisons of preconditioned iterative methods for problems arising in PDE-constrained optimization, Uppsala University, Disciplinary Domain of Science and Technology, Mathematics and Computer Science, Department of Information Technology, MSc Thesis, IT, 15023, 2015
431. V. Korneev, U. Langer, Dirichlet–Dirichlet Domain Decomposition Methods for Elliptic Problems: h and hp Finite Element Discretizations, World Scientific, 2015
432. G. Kanschat, R. Lazarov, Y. Mao, Geometric Multigrid for Darcy and Brinkman models of flows in highly heterogeneous porous media: A numerical study, Journal of Computational and Applied Mathematics (2016), DOI: 10.1016/j.cam.2016.05.016
433. U. Langer, H. Yang, Robust and efficient monolithic fluid-structure-interaction solvers, Numerical Methods in Engineering (2016), DOI: 10.1002/nme.5214
434. I. Pultarová, Hierarchical preconditioning for the stochastic Galerkin method: Upper bounds to the strengthened CBS constants, Computers & Mathematics with Applications, Vol. 71 (4) (2016), 949–964
435. U. Langer, H. Yang, Recent development of robust monolithic fluid-structure interaction solvers, RICAM-Report 2016-35
436. U Langer, H Yang, Numerical simulation of fluid–structure interaction problems with hyperelastic models: A monolithic approach, Elsevier Mathematics and Computers in Simulation, 2016, https://doi.org/10.1016/j.matcom.2016.07.008
437. O'Malley, B., Kophazi, J., Smedley-Stevenson, R.P., Eaton, M.D., Hybrid multi-level solvers for discontinuous Galerkin finite element discrete ordinate (DG-FEM-SN) diffusion synthetic acceleration (DSA) of radiation transport algorithms, Annals of Nuclear Energy, Vol. 102 (2016), 134-147
438. Z. Dostál, T. Kozubek, Preconditioning and Scaling, In: Scalable Algorithms for Contact Problems, Springer, Advances in Mechanics and Mathematics, Vol. 36 (2017), 291-300
439. G. Kanschat, R. Lazarov, Y. Mao, Geometric Multigrid for Darcy and Brinkman models of flows in highly heterogeneous porous media: A numerical study, Journal of Computational and Applied Mathematics, Vol. 310 (2017), 174-185

440. B. O'Malley, J. Kópházi, R.P. Smedley-Stevenson, M.D. Eaton, Hybrid Multi-level solvers for discontinuous Galerkin finite element discrete ordinate diffusion synthetic acceleration of radiation transport algorithms, Annals of Nuclear Energy, Vol. 102 (2017), 134-147
441. I. Pultarova, Block and multilevel preconditioning for stochastic Galerkin problems with lognormally distributed parameters and tensor product polynomials, International Journal for Uncertainty Quantification, Vol. 7 (5) (2017), 441-462
442. R. Blaheta, T. Luber, Algebraic preconditioning for Biot-Barenblatt poroelastic systems, Applications of Mathematics, Vol. 62 (6) (2017), 561-577
443. M. Buck, O. Iliev, H. Andrä, Domain decomposition preconditioners for multiscale problems in linear elasticity, Numerical Linear Algebra with Applications, https://doi.org/10.1002/nla.2171, 2018
444. U Langer, H Yang, Numerical simulation of fluid–structure interaction problems with hyperelastic models: A monolithic approach, Mathematics and Computers in Simulation, Vol. 145 (2018), 186-208
445. R. Blaheta, M. Béreš, S. Domesová, P. Pan, A comparison of deterministic and Bayesian inverse with application in micromechanics, Applications of Mathematics, Vol. 63 (6) (2018), 665–686
446. E.P. Shurina, N.B. Itkina, S.A. Trofimova Multilevel Method Modifications for Discrete Analogues of Mixed Variational Formulations of the Filtration Problem, 2018 XIV International Scientific-Technical Conference on Actual Problems of Electronics Instrument Engineering (APEIE) (2018), DOI: 10.1109/APEIE.2018.8545668
447. С.А. Трофимова, Н.А. Иткина, Е.П. Шурина, Построение многоуровневых решателей для дискретного аналога задачи Дарси, Труды международной конференции "Вычислительная математика и математическая геофизика", посвященная 90-летию со дня рождения академика А. С. Алексеева, Институт вычислительной математики и математической геофизики Сибирского отделения РАН (Новосибирск) (2018), 386-392
448. Н.А. Иткина, С.А. Трофимова, Построение дискретного аналога смешанной формулировки задачи фильтрации, Высокопроизводительные вычислительные системы и технологии, Том 2 (2) (2018), 80-86
449. J. Hrnčíř, I, Pultarova, Z. Strakoš, Decomposition into subspaces preconditioning: abstract framework, Numerical Algorithms, Vol. 83 (2020), 57–98
450. M. Kubínová, I. Pultarová, Block preconditioning of stochastic Galerkin problems: New two-sided guaranteed spectral bounds, SIAM/ASA Journal on Uncertainty Quantification, Vol. 8(1) (2020), 88–113
451. M Čertíková, L Gaynutdinova, I Pultarová, Multilevel a posteriori error estimator for greedy reduced basis algorithms, SN Applied Sciences, Vol. 2 (2020), 614, https://doi.org/10.1007/s42452-020-2409-9
452. С. А. Трофимова, Н. Б. Иткина, Э. П. Шурина, Иерархический базис в пространстве H^{div} для смешанной конечноэлементной постановки задачи Дарси, Сиб. электрон. матем. изв., том 17 (2020), 1741–1765
453. I. Pultarová, M. Ladecký, Two-sided guaranteed bounds to individual eigenvalues of preconditioned finite element and finite difference problems, Numerical Linear Algebra with Applications, (2021), e2382, https://doi.org/10.1002/nla.2382
454. À. R. Yeshkeyev, Ì. Ò. Kassymetova, Î. I. Ulbrikht, independence and Simplicity in Jonsson theories with Abstract Geometry, Siberian Electronic Mathematical Reports, Vol. 18 (1), 2021, 433-455
455. M. Ladecký, Advanced spectral methods for computational homogenization of periodic media, Ph.D. Thesis, Czech Technical University in Prague, Faculty of Civil Engineering, Department of Mathematics (2022), file:///C:/Users/98/Downloads/F1-D-2022-Ladecky-Martin-DT_MARTIN_LADECKY%20(1).pdf
456. Z. Dostál, T. Kozubek, Preconditioning and Scaling, Scalable Algorithms for Contact Problems. Advances in Mechanics and Mathematics, vol 36. Springer, Cham, 2023, 375-393, https://doi.org/10.1007/978-3-031-33580-8_17
457. A. Budiša, X. Hu, M. Kuchta, K.-A. Mardal, HAZniCS – Software Components for Multiphysics

Problems, ACM Transactions on Mathematical Software, Vol. 49 (4), Article No 36, 2023, 1-23, https://doi.org/10.1145/3625561

- **K Georgiev, N Kosturski, S Margenov, J Starý, On adaptive time stepping for large-scale parabolic problems: Computer simulation of heat and mass transfer in vacuum freeze-drying, Journal of Computational and Applied Mathematics, Volume 226, 2, (2009), 268–274**
  In:

458. Z. Huifen, Y. Sheng, W. Dexi, L. Huixing, C. Xiaozhen, Y. Lijun, Mathematical Problems in Engineering, Vol. 2012 (2012), Article ID 941609, doi:10.1155/2012/941609
459. T. Coupez, G. Jannoun, N. Nassif, H.C. Nguyen, H. Digonnet, E. Hachem, Adaptive time-step with anisotropic meshing for incompressible flows, Journal of Computational Physics, Vol. 241 (2013), 195–211, ISSN: 0021-9991
460. G. Jannoun, E. Hachem, J. Veysset, T. Coupez, Anisotropic meshing with time-stepping control for unsteady convection-dominated problems, Applied Mathematical Modelling, Vol. 39 (7) (2015), 1899-1916
461. W.M. El-Maghlany, A. El-Rahman, B. Mohamed, E.A. Attia, Freeze-drying modeling via multiphase porous media transport model, International Journal of Thermal Sciences, Vol. 135 (2019), 509-522
462. R. Safa, A.S. Goharrizi, S. Jafari, E.J. Javaran, Simulation of particles dissolution in the shear flow: A combined concentration lattice Boltzmann and smoothed profile approach, Computers & Mathematics with Applications, Vol. 79 (3) (2020), 603-622
463. J.-G. Ling, X.-T. Xuan, N. Yu, Y. Cui, H.-T. Shang, X.-J. Liao, X.-D. Lin, J.-F. Yu, D.-H. Liu, High pressure-assisted vacuum-freeze drying: A novel, efficient way to accelerate moisture migration in shrimp processing, Journal of Food Science, Vol. 85 (4) (2020), https://doi.org/10.1111/1750-3841.15027
464. F. Selimefendigil, S.Ö. Çoban, H.F. Öztop, Investigation of time dependent heat and mass transportation for drying of 3D porous moist objects in convective conditions, International Journal of Thermal Sciences, Vol. 162 (2021), 106788

- **I. Georgiev, J. Kraus, S. Margenov, J. Schicho, Locally optimized MIC(0) preconditioning of Rannacher-Turek FEM systems, Appl. Numer. Math., 59 (2009), 2402-2415**
  In:

465. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishin House “Prof. Marin Drinov”, Sofia, 2013 (In Bulgarian), ISBN: 978-954-322-625-2
466. M. Donatellia, A. Dorostkarb, M. Mazzac, M. Neytchevab, S. Serra-Capizzano, Function-based block multigrid strategy for a two-dimensional linear elasticity-type problem, Computers & Mathematics with Applications (2017), https://doi.org/10.1016/j.camwa.2017.05.024

- **N. Kosturski, S. Margenov, MIC(0) preconditioning of 3D FEM problems on unstructured grids: conforming and non-conforming elements, J. Comp. Appl. Math., 226 (2009), 288-297**
  In:

467. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishin House “Prof. Marin Drinov”, Sofia, 2013 (In Bulgarian), ISBN: 978-954-322-625-2
468. S. Ganguly, h-adaptive FEM technique – An application to phase field modeling for the study of ICVI process for Silicon Carbide, Indian Institute of Technology, Guwahati India, Theses, 2009

469. J. Henon, F. Pennec, A Alzina, J. Absi, D.S. Smith, S. Rossignol, Analytical and numerical identification of the skeleton thermal conductivity of a geopolymer foam using a multi-scale analysis, Computational Materials Science, Vol. 82 (2014), 264–273, ISSN: 0927-0256
470. Y. Vutov, Prallel Iterative Methods for Nonconforming Finite Elements, Ph.D. Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Sofia, 2015 (In Bulgarian)

- **I. Georgiev, J. Kraus, S. Margenov, Multilevel Preconditioning of Crouzeix-Raviart 3D Pure Displacement Elasticity Problems, Lecture Notes in Computer Sciences, Springer, 5910 (2010), 103-110**
  In:

471. E. Karer, Subspace Correction Methods for Linear Elasticity, PhD Thesis, JKU Linz, 2011
472. A. Dorostkar, M. Neytchevaa, B. Lund, Numerical and computational aspects of some block-preconditioners for saddle point systems, Parallel Computing , Vol. 49 (2015), 164–178
473. A. Dorostar, Analysis and Implementation of Preconditioners for Prestressed Elasticity Problems, Advances and Enhancements, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technologies 1580, 2017

- **N. Kosturski, S. Margenov, Supercomputer Simulation of Radio-frequency Hepatic Tumor Ablation, AIP Conference Proceedings 1301, 486 (2010); https://doi.org/10.1063/1.3526648**
  In

474. F. Qin, K. Zhang, J. Zou, J. Sun, A. Zhang, L.X. Xu, A New Model for RF Ablation Planning in Clinic, 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) (2018), DOI: 10.1109/EMBC.2018.8512926

- **S. Margenov, Y. Vutov, Parallel MIC(0) Preconditioning for Numerical Upscaling of Anisotropic Linear Elastic Materials, Springer LNCS 5910 (2010), 805–812**
  In

475. Y. Yang, S. Fu, E.T. Chung, An Adaptive Generalized Multiscale Finite Element Method Based Two-Grid Preconditioner for Large Scale High-Contrast Linear Elasticity Problems, Journal of Scientific Computing, Vol. 92 (2022), 21

- **N. Kosturski, S. Margenov, Numerical Homogenization of Bone Microstructure, Springer LNCS 5910 (2010), 140-147**
  In

476. Y. Yoshiwara, M. Clanghe, K. S. Basaruddin, N. Takano, T. Nakono, Numerical Study on the Morphology and Mechanical Role of Healthy and Osteoporotic Vertebral Trabecular Bone, Journal of Biomechanical Science and Engineering 6(4) (2011), 270-285
477. K.S. Basaruddin, N. Takano, Y. Yoshiwara, T Nakano, Morphology analysis of vertebral trabecular bone under dynamic loading based on multi-scale theory, Medical & Biological Engineering & Computing, Vol. 50 (10) (2012), 1091-1103
478. I. Georgiev, HPC biomedical simulations based on CT data, Biomath Communications, Vol. 3(1), 2016
479. K. S. Basaruddin, H. Yazid, M. J. A. Safar, S. N. Basha, F. S. A. Sa'ad, M. I. Hassan, Effect of Image Thresholding on the Homogenized Properties of Trabecular Bone Model, Proceedings of the 11th International Conference on Robotics, Vision, Signal Processing and Power Applications, Lecture Notes in Electrical Engineering, Vol 829 (2022), Springer, https://doi.org/10.1007/978-981-16-8129-5_149

- **P. Boyanova, S. Margenov, M. Neytcheva, Robust AMLI methods for parabolic Crouzeix-Raviart FEM Systems, J. Comput. Appl. Math., Vol. 235 (2) (2010), 380-390**
  In:

480. A. Dorostar, Analysis and Implementation of Preconditioners for Prestressed Elasticity Problems, Advances and Enhancements, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technologies 1580, 2017

- **P. Popov, Y. Vutov, S. Margenov and O. Iliev, Finite Volume Discretization of Equations Describing Nonlinear Diffusion in Li-Ion Batteries, Numerical Methods and Applications, Lecture Notes in Computer Science, Vol. 6046 (2011), 338-346**
  <u>In</u>:

481. A. Joshi, G. Qiu, Y. Sun, Pore-Scale Modeling of Transport in a Lithium Ion Battery Using X-ray, Tomography Based Electrode Structures, ECS Meeting Abstracts 1101,504 (2011)
482. O. Lass, S. Volkwein, POD Galerkin schemes for nonlinear elliptic-parabolic systems, Universität Konstanz, Konstanzer Schriften in Mathematik Nr. 301, 2012
483. O. Lass, Efficient POD reduced-order modeling for parametrized nonlinear PDE systems, Universität Konstanz, Konstanzer Schriften in Mathematik Nr. 310, 2012
484. O. Lass, S. Volkwein, POD Galerkin schemes for nonlinear elliptic-parabolic systems, SIAM J. Sc. Comp., 35(3) (2013), A1271–A1298, ISSN:1064-8275
485. S. Volkwein, A. Wesche, The reduced basis method applied to transport equations of a lithium-ion battery, COMPEL - The international journal for computation and mathematics in electrical and electronic engineering (2013), Konstanzer Online-Publikations-System (KOPS), URL: http://nbn-resolving.de/urn:nbn:de:bsz:352-206769, ISSN: 0332-1649
486. A. Scherrer, P. Rüdiger, A. Dinges, K.-H. Küfer, I. Schwidde, S. Kümmel, A decision support system for advanced treatment planning for breast cance, Berichte des Fraunhofer ITWM, Nr. 233, 2013
487. S. Schmidt, L. Kreußer, S. Zhang, POD-DEIM based model order reduction for a three-dimensional microscopic Li-Ion battery mode, Berichte des Fraunhofer ITWM, Nr. 229, 2013
488. M. Ohlberger, S. Rave, S. Schmidt, S. Zhang, A Model Reduction Framework for Efficient Simulation of Li-Ion Batteries, Cornell University Library, arXiv.org > math > arXiv:1404.0972, 2014
489. O. Lass, Reduced order modeling and parameter identification for coupled nonlinear PDE systems, Dissertation, University of Constanz, 2014
490. M. Ohlberger, S. Rave, S. Schmidt, S. Zhang, A Model Reduction Framework for Eficient Simulation of Li-Ion Batteries, Cornell University Library, arXiv: 1404.0972, 2014
491. S Zhang, O Iliev, S Schmidt, J Zausch, Comparison of two approaches for treatment of the interface conditions in FV discretization of pore scale models for Li-Ion batteries, Springer Proceedings in Mathematics and Statistics, 78 (2014), 731-738
492. M. Hadigol, K. Maute, A. Doostan, On Uncertainty Quantification of Lithium-ion Batteries, Cornell University Library, arXiv.org > physics > arXiv:1505.07776, 2015
493. M. Taralov, Simulation of Degradation Processes in Lithium-Ion Batteries, Vom Fachbereich Mathematik der Technischen Universitat Kaiserslautern zur Verleihung des akademischen Grades Doktor der Naturwissenschaften, D386, 2015
494. O. Lass, S. Vokwein, Parameter identification for nonlinear elliptic parabolic systems with application in lithium-ion battery modeling, Computational Optimization and Applications, Vol. 62 (1) (2015), 217-239
495. M Ohlberger, S Rave, F Schindler, Model Reduction for Multiscale Lithium-Ion Battery Simulation, Cornell University Library, arXiv:1602.08910, 2016
496. M Ohlberger, S Rave, Localized Reduced Basis Approximation of a Nonlinear Finite Volume Battery Model with Resolved Electrode Geometry, Cornell University Library, arXiv preprint arXiv:1606.05070, 2016
497. J. A. Karolin Wesche, Reduced Basis Methods for Model Reduction and Sensitivity Analysis of Complex Partial Differential Equations with Applications to Lithium-Ion Batteries, Doctoral dissertation, University of Konstanz, 510 Mathematics, 2016
498. M. Hadigol, Uncertainty Quantification of Coupled Problems with Applications to Lithium-ion Batteries, University of Colorado at Boulder, ProQuest Dissertations Publishing, 2016, 10150933
499. J. Stamm, A. Varzi, A. Latz, B. Horstmann, Modeling Nucleation and Growth of Zinc Oxide

During Discharge of Primary Zinc-Air Batteries, Journal of Power Sources 360 (2017), 136-149

500. J. Feinauer, S. Hein, S. Rave, S Schmidt, S. Schmidt, D. Westhoff, J. Zausch, O. Iliev, A. Latz, M. Ohlberger, V. Schmidt, MULTIBAT: Unified workflow for fast electrochemical 3D simulations of lithium-ion cells combining virtual stochastic microstructures, electrochemical degradation models and model order reduction, Cornell University Library, arXiv:1704.04139, 2017

501. J. Feinauer, S. Hein, S. Rave, S. Schmidt, D. Westhoff, J. Zausch, O. Iliev, A. Latz, M. Ohlberger, V. Schmidt, MULTIBAT: Unified workflow for fast electrochemical 3D simulations of lithium-ion cells combining virtual stochastic microstructures, electrochemical degradation models and model order reduction, Royal Society of Chemistry, 2017

502. M. Ohlberger, S. Rave, Localized Reduced Basis Approximation of a Nonlinear Finite Volume Battery Model with Resolved Electrode Geometry, Modeling, Simulation and Applications, Vol. 17 (2017), 201-212

503. G.F. Castelli, W. Dörfler, The numerical study of a microscale model for lithium-ion batteries, Computers & Mathematics with Applications, Vol. 77 (6) (2019), 1527-1540

504. Y, Kato, Z. Ogumi, J.M, Perlado Martín, Lithium-Ion Batteries: Overview, Simulation, and Diagnostics, Pan Stanford Publishing, 2019

505. H. Feng, An Online Prediction System of Lithium-ion Battery Safety, 2021 IEEE International Conference on Advances in Electrical Engineering and Computer Applications (AEECA), 2021, DOI: 10.1109/AEECA52519.2021

506. F. Schneider, J. Zausch, J. Lammel, H. Andrä, An Efficient Semi-Implicit Solver for Solid Electrolyte Interphase Growth in Li-Ion Batteries, Applied Mathematical Modelling, Vol. 109 (2022), 741-759

507. F. Schneider, Development and Analysis of Numerical Simulation Methods for Lithium-Ion Battery Degradation, Fraunhofer Institute for Industrial Mathematics ITWM (2023), : https://doi.org/10.24406/publica-783

- **Y. Efendiev, J. Galvis, R.D. Lazarov, S. Margenov, and J. Ren. Domain decomposition preconditioners for anisotropic high-contrast problems, ISC-Preprint-2011-05, Institute for ScienticmComputation, Texas A&M University, 2011**
  In

508. J. Willems, Robust Multilevel Solvers for High-Contrast Anisotropic Multiscale Problems, RICAM Reports 2012-17, Linz, Austria, 2012

509. J. Willems, Robust multilevel solvers for high-contrast anisotropic multiscale problems, J. Comp. Appl. Math., Vol. 251 (2013), 47-60, ISSN: 0377-0427

510. J. Willems, Spectral Coarse Spaces in Robust Two-Level Schwarz Methods, Numerical Solution of Partial Differential Equations, Springer Proceedings in Mathematics and Statistics, Vol. 45 (2013), 303-326, ISBN: 978-1-4614-7171-4

511. J.A. Asadova, Numerical solution of a system of independent three-point discrete equations with non-separated boundary conditions, Proceedings of IAM, Vol. 4 (1) (2015), 58-69

512. K. R. Aida-zade , Ye. R. Ashrafova, Solving systems of differential equations of block structure with nonseparated boundary conditions, Journal of Applied and Industrial Mathematics, Vol. 9 (1) (2015), 1-10

- **M. Lymbery, S. Margenov, Robust balanced semi-coarsening AMLI preconditioning of biquadratic FEM systems, AIP Conference Proceedings, Vol. 1404 (2011), 438-447**
  In:

513. O. Axelsson, I. Gustafsson, A coarse–fine-mesh stabilization for an alternating Schwarz domain decomposition method, Numerical Linear Algebra with Applications, Vol. 26(3) (2019), https://doi.org/10.1002/nla.2236

- **M. Ganzha, K. Georgiev, I. Lirkov, S. Margenov, M. Paprzycki, Highly Parallel Alternating Directions Algorithm for Time Dependent Problems, AIP Conf. Proc. 1404, 210 (2011); doi: 10.1063/1.3659922**

In:

514. J.K. Wiens, J.M. Stockie, An efficient parallel immersed boundary algorithm using a pseudo-compressible fluid solver, Cornell University Library, arXiv:1305.3976, 2013
515. J.K. Wiens, J.M. Stockie, An efficient parallel immersed boundary algorithm using a pseudo-compressible fluid solver, Journal of Computational Physics, Vol. 281 (2015), 917–941

- **N. Kosturski, S. Margenov, and Y. Vutov, Comparison of Two Techniques for Radiofrequency Hepatic Tumor Ablation through Numerical Simulation, AIP Conf. Proc. 1404, 431 (2011); doi: 10.1063/1.3659945**

In:

516. H.J. Schalkx, E.T. Petersen, Arterial and portal venous liver perfusion using selective spin labelling MRI, Eur. Radiol. 25 (2015), 1529-1540
517. P. Gas, J. Wyszkowska, Influence of multi-tine electrode configuration in realistic hepatic RF ablative heating, Archives of Electrical Engineering, Vol. 68 (3) (2019), 521--533

- **Y. Efendiev, J. Galvis, R.D. Lazarov, S. Margenov, and J. Ren, Robust two-level domain decomposition preconditioners for high-contrast anisotropic flows in multiscale media, Comp. Meth. Appl. Math., 12 (4) (2012), 415-436**

In

518. M. Lymbery, Iterative Multilevel Methods for Conforming Quadratic, Biquadratic and Bicubic Finite Elements, Thesis, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Academic Publishin House “Prof. Marin Drinov”, Sofia, 2013 (In Bulgarian), ISBN: 978-954-322-625-2
519. J. Willems, Robust multilevel solvers for high-contrast anisotropic multiscale problems, Journal of Computational and Applied Mathematics, Vol. 251 (2013), 47-60, ISSN: 0377-0427
520. L Grigori, F Nataf, Y. Saad, Preconditionneurs algebriques bases sur des corrections de rang faible rapport de recherché Inria, Equipes-Projets ALPINES, Rapport de recherche n° 8557, 2014
521. L Grigori, F Nataf, Y. Saad, Robust algebraic Schur complement preconditioners based on low rank corrections, Archive Ouverte HAL-UPMC, hal-01017448, 2014
522. H. Xie, X. Xu, Mass Conservative Domain Decomposition Preconditioners for Multiscale Finite Volume Method, SIAM Multiscale Model. Simul., 12(4), 2014,1667–1690
523. H. Wang, Y. Ren, J. Jiaa, M. A. Celia, A probabilistic collocation Eulerian–Lagrangian localized adjoint method on sparse grids for assessing View the MathML source CO_2 leakage through wells in randomly heterogeneous porous media, Computer Methods in Applied Mechanics and Engineering, doi:10.1016/j.cma.2014.11.034, 2014
524. V. Ginting, G. Lin, J. Liu, On Application of the Weak Galerkin Finite Element Method to a Two-Phase Model for Subsurface Flow, Journal of Scientific Computing (2015), DOI 10.1007/s10915-015-0021-8
525. H. Wang, Y. Ren, J. Jia, M. Celia, A probabilistic collocation Eulerian–Lagrangian localized adjoint method on sparse grids for assessing View the MathML source CO2 leakage through wells in randomly heterogeneous porous media, Computer Methods in Applied Mechanics and Engineering, Vol. 292 (2015), 35–53
526. J. Ren, , M. Presho, A generalized multiscale finite element method for high-contrast single-phase flow problems in anisotropic media, Journal of Computational and Applied Mathematics, Vol. 277 (2015), 202–214
527. L. Marcinkowski, T. Rahman, Schwarz Preconditioner with Face Based Coarse Space for Multiscale Elliptic Problems in 3D, Parallel Processing and Applied Mathematics, Springer LNCS, Vol. 9574 (2016), 345-354
528. L. Marcinkowski, T Rahman, Schwarz Preconditioner with Face Based Coarse Space for Multiscale Elliptic Problems in 3D, Springer LNCS, Vol. 9574 (2016), 345-354
529. V. Ginting, G. Lin, J. Liu, On Application of the Weak Galerkin Finite Element Method to a Two-Phase Model for Subsurface Flow, Journal of Scientific Computing, Vol. 66 (1) (2016), 225-239

530. Q Deng, V Ginting, Locally Conservative Continuous Galerkin FEM for Pressure Equation in Two-Phase Flow Model in Subsurfaces, Cornell University Library, arXiv:1603.06998, 2016
531. L. Marcinkowski, T. Rahman, Additive average Schwarz with adaptive coarse space, Cornell University Library, arXiv preprint arXiv:1709.00452, 2017
532. Q. Deng, V. Ginting, Locally Conservative Continuous Galerkin FEM for Pressure Equation in Two-Phase Flow Model in Subsurfaces, Journal of Scientific Computing, Vol. 74, (3) (2018), 1264–1285
533. E. Eikeland, L. Marcinkowski, T. Rahman, Overlapping Schwarz methods with adaptive coarse spaces for multiscale problems in 3D, Numerische Mathematik, Vol. 142 (1) (2019), 103–128
534. E. Eikeland, L. Marcinkowski, T. Rahman, An adaptively enriched coarse space for Schwarz preconditioners for P_1 discontinuous Galerkin multiscale finite element problems, IMA Journal of Numerical Analysis, Vol 41 (4) (2021), 2873–2895
535. L. Marcinkowski, T. Rahman, Adaptive Schwarz Method for a Non-Conforming Crouzeix-Raviart Discretization of a Multiscale Elliptic Problem, Domain Decomposition Methods in Science and Engineering XXVII. DD 2022. Lecture Notes in Computational Science and Engineering, Vol. 149. Springer, Cham, (2024), https://doi.org/10.1007/978-3-031-50769-4_59

- **I. Lirkov, S. Margenov, J. Wasniewski, Large-Scale Scientific Computing: 8th International Conference, LSSC 2011, Sozopol, Bulgaria, June 6-10th, 2011. Revised Selected Papers, (2012), DOI 10.1007/979-3-642-29843-1**
  <u>In:</u>

536. D. Pivovarov, P. Steinmann, On stochastic FEM based computational homogenization of magneto-active heterogeneous materials with random microstructure, Comput. Mech., (58), (2016), 981–1002, https://doi.org/10.1007/s00466-016-1329-4
537. A. Asperti, D. Branca, Generazione di attributi facciali mediante Feature-wise Linear Modulation, Scuola di Scienze, Corso di Laurea in Informatica, (2019), https://core.ac.uk/download/pdf/294761165.pdf
538. S. Lucarini, M.V. Upadhyay, J. Segurado, FFT based approaches in micromechanics: fundamentals, methods and applications, Modelling Simul. Mater. Sci. Eng., (2021), 30 023002, DOI 10.1088/1361-651X/ac34e1

- **J Kraus, M Lymbery, S Margenov, Robust multilevel methods for quadratic finite element anisotropic elliptic problems, Numerical Linear Algebra with Applications, DOI: 10.1002/nla.1876, 2012**
  <u>In:</u>

539. L Zikatanov, Final Report:B595949 – Fast Solvers for Discrete Hodge Laplacians, Lawrence Livermore National Laboratory, LLNL-SR-612652, 2013

- **M Lymbery, S Margenov, Robust semi-coarsening multilevel preconditioning of biquadratic FEM systems, Central European Journal of Mathematics, 10 (1) (2012), 357-369**
  <u>In:</u>

540. K.P.S. Gahalaut, S.K. Tomar, J.K. Kraus, Computer Methods in Applied Mechanics and Engineering, Vol. 266 (1) (2013), 40–56
541. J. Kraus, M. Wolfmayr, On the robustness and optimality of algebraic multilevel methods for reaction–diffusion type problems, Computing and Visualization in Science (16) (2013), 15-32
542. O. Axelsson, I. Gustafsson, A coarse–fine-mesh stabilization for an alternating Schwarz domain decomposition method, Numerical Linear Algebra with Applications, Vol. 26 (3) (2019), https://doi.org/10.1002/nla.2236

- **I. Lirkov, S.D. Margenov, J. Wasniewski, Large-Scale Scientific Computing: 8th International Conference, LSSC 2011, Springer LNCS, Vol. 7116, 2012**
  <u>In</u>:

543. D. Branca, Generazionedi attributi facciali medianteFeature-wise Linear Modulation, Universita di Bologna, Thesis, 2020

- **J Kraus, M Lymbery, S Margenov, On the robustness of two-level preconditioners for quadratic FE orthotropic elliptic problems, Large-Scale Scientific Computing, Springr LNCS 7116 (2012), 582-589**
  In:

544. U. Langer, K. Kunish, Johann Radon Institute for Computational and Applied Mathematics, Annual Report, 2012

- **Y. Efendiev, J. Galvis, R. Lazarov, S. Margenov, J. Ren, Multiscale domain decomposition preconditioners for anisotropic high-contrast problems, Domain Decomposition Methods in Science and Engineering XX, Springer Lecture Notes in Computational Science and Engineering 91 (2013), 289-297**
  In:

545. J. Willems, Spectral Coarse Spaces in robust two-level methods, RICAM-Report No. 2012-20, Linz, 2012
546. J. Willems, Robust multilevel solvers for high-contrast anisotropic multiscale problems, Journal of Computational and Applied Mathematics, Vol. 251, 15 (2013), 47–60
547. J. Willems, Spectral Coarse Spaces in Robust Two-Level Schwarz Methods, Numerical Solution of Partial Differential Equations: Theory, Algorithms, and their Applications, Springer Proceedings in Mathematics and Statistics, Vol. 45 (2013), 303-326
548. J.A. Asadova, Numerical Solution of a System of Independent Three-point Discrete Equations with Non-separated Boundary Conditions, Proceedings of IAM, V.4, N.1 (2015), 58-69
549. K.R. Aida-zade, Y.R. Ashrafova, Solving systems of differential equations of block structure with nonseparated boundary conditions, Journal of Applied and Industrial, Vol. 9 (2015), 1-10
550. K.R. Aida-zade, D.A. Asadova, Numerical Solution to Discrete Systems of Block Structure with Boundary Conditions Unshared Between Blocks, Proceedings of IAM, V. 5 (2016), 34-45
551. K.R. Aida-zade, D.A. Asadova, Calculation of the state of a system of discrete linear processes connected by unseparated boundary conditions, Journal of Applied and Industrial Mathematics, Vol. 10 (4) (2016), 457–467
552. К.Р. Айда-заде, Е.Р. Ашрафова, Расчет состояния системы дискретных линейных процессов, связанных неразделенными краевыми условиями, Сиб. журн. индустр. матем., том 19, номер 4 (2016), 3–14

- **J. Kraus, M. Lymbery, S. Margenov, Robust multilevel methods for quadratic finite element anisotropic elliptic problems, Numerical Linear Algebra with Applications, Vol. 21 (3) (2014), 375–398**
  In:

553. L. Zikatanov, Final Report:B595949 – Fast Solvers for Discrete Hodge Laplacians, LLNL-SR-612652, 2013

- **S. Stoykov, S Margenov, Numerical computation of periodic responses of nonlinear large-scale systems by shooting method, Computers & Mathematics with Applications 67 (12), 2257-2267**
  In:

554. H. Akhavan, P. Ribeiro, Non-linear forced periodic oscillations of laminates with curved fibres by the shooting method, International Journal of Non-Linear Mechanics, Vol. 76 (20150, 176–189
555. T. Detroux, L. Renson, L. Masset, G. Kerschen, The harmonic balance method for bifurcation analysis of large-scale nonlinear mechanical systems, Computer Methods in Applied Mechanics and Engineering, Vol. 296 (2015), 18–38

556. H. Akhavan, Non-linear Vibrations of Tow Placed Variable Stiffness Composite Laminates, FEUP – Tese (2015), http://hdl.handle.net/10216/81629
557. L. Yuanping, C. Siyu, Periodic solution and bifurcation of a suspension vibration system by incremental harmonic balance and continuation method, Nonlinear Dynamics, Vol. 293 (2016), 223–231
558. S.B. Cooper, D. Di Maio, D.J. Ewins, Integration of system identification and finite element modelling of nonlinear vibrating structures, Integration of system identification and finite element modelling of nonlinear vibrating structures, Mechanical Systems and Signal Processing, Vol. 102, (2018), 401-430
559. E. Ferhatoglu, E. Cigeroglu, H.N. Özgüven, A new modal superposition method for nonlinear vibration analysis of structures using hybrid mode shapes, Mechanical Systems and Signal Processing, Vol. 107 (2018), 317-342
560. L Charroyer, O. Chiello, J.J. Sinou, Self-excited vibrations of a non-smooth contact dynamical system with planar friction based on the shooting method, International Journal of Mechanical Sciences, Vol. 144 (2018), 90-101
561. G. Zhang, .C Zang, M.I. Friswell, Measurement of multivalued response curves of a strongly nonlinear system by exploiting exciter dynamics, Measurement of multivalued response curves of a strongly nonlinear system by exploiting exciter dynamics, Mechanical Systems and Signal Processing, Vol. 140 (2020), 106474, https://doi.org/10.1016/j.ymssp.2019.106474
562. L. Charroyer, O. Chiello, Estimation of self-sustained vibration for a finite element brake model based on the shooting method with a reduced basis approximation of initial conditions, Journal of Sound and Vibration, Vol. 468(2020), 115050, https://doi.org/10.1016/j.jsv.2019.115050
563. H. Liao, M. Li, R. Gao, A nonlinear optimization shooting method for bifurcation tracking of nonlinear systems, Journal of Vibration and Control (2020) https://doi.org/10.1177/1077546320956743
564. L. Wang, Z.-R. Lu, J. Liu, Convergence rates of harmonic balance method for periodic solution of smooth and non-smooth systems, Communications in Nonlinear Science and Numerical Simulation, Vol. 99 (2021), 105826
565. G.-Y. Lee, Y.-H. Park, A proper generalized decomposition-based harmonic balance method with arc-length continuation for nonlinear frequency response analysis, Computers & Structures, Vol. 275 (15) (2023), 106913, https://doi.org/10.1016/j.compstruc.2022.106913
566. E. Robbins, R.J. Kuether, B.R. Pacini, F. Moreu, Stabilizing a strongly nonlinear structure through shaker dynamics in fixed frequency voltage control tests, Mechanical Systems and Signal Processing, Vol. 190 (2023), https://doi.org/10.1016/j.ymssp.2023.110118
567. D. Yang, L. Wang, Z.R. Lu, Periodic solution and stability analysis of dry friction system based on an alternate state-space shooting algorithm, Nonlinear Dynamics, 111 (2023), 7433-7458
568. T.S. Martins, F. Trainotti, A. Zwölfer, F. Afonso, A Python Implementation of a Robust Multi-Harmonic Balance With Numerical Continuation and Automatic Differentiation for Structural Dynamics, J. Comput. Nonlinear Dynam, 18(7) (2023), https://doi.org/10.1115/1.4062204
569. Q. Ragueneau, L. Laurent, A. Legay, et al, A constrained Bayesian Optimization framework for structural vibrations with local nonlinearities, Struct Multidisc Optim, 67 (47), (2024), https://doi.org/10.1007/s00158-024-03747-5
570. M. Volvert, Resonant phase lags of nonlinear mechanical systems, Doctoral College in Aerospace and Mechanics, Liege Universite, (2024), file:///C:/Users/98/Downloads/2024_Volvert_Thesis.pdf

- **M. Ganzha, K. Georgiev, I. Lirkov, S. Margenov, M. Paprzycki, Highly parallel alternating directions algorithm for time dependent problems, AIP Conference Proceedings-American Institute of Physics, Vol. 1404(1) (2011), 210-217**
  <u>In:</u>

571. J. K. Wiens, J. M. Stockie, An efficient parallel immersed boundary algorithm using a pseudo-compressible fluid solver, Journal of Computational Physics, Vol. 281 (2015), 917–941

- **N. Kosturski, S. Margenov, Y. Vutov, Computer simulation of RF liver ablation on an MRI scan data, AIP Conference Proceedings-American Institute of Physics, Vol. 1487 (2012), 120-126**
  <u>In</u>:

572. C. Chen, D. X. Liu, Z. C. Liu, A. J. Yang, H. L. Chen, A model of plasma-biofilm and plasma-tissue interactions at ambient pressure, Plasma Chemistry and Plasma Processes (2014), DOI 10.1007/s11090-014-9545-1

- **S. Margenov, S. Stoykov, Y. Vutov, Numerical homogenization of heterogeneous anisotropic linear elastic materials, Large-Scale Scientific Computing, Springer LNCS 8353 (2013), 347-354**
  <u>In</u>:

573. J.M. Zhao, X.X. Song, B. Liu, Standardized Compliance Matrices for General Anisotropic Materials and a Simple Measure of Anisotropy Degree Based on Shear-Extension Coupling Coefficient, International Journal of Applied Mechanics, Vol. 8, No. 6 (2016) 1650076 (27 pages), DOI: 10.1142/S1758825116500769

- **O.P. Iliev, S.D. Margenov, P.D. Minev, P.S. Vassilevski, L.T. Zikatanov, Numerical Solution of Partial Differential Equations: Theory, Algorithms, and Their Applications, Springer Proceedings in Mathematics & Statistics, Vol. 45, 2013, DOI: 10.1007/978-1-4614-7172-1**
  <u>In</u>:

574. K. Zabrocki, W. Seifert, Continuum Theory and Modeling of Thermoelectric Elements, Wiley Online Library 6 (2015), DOI: 10.1002/9783527338405.ch6
575. F. Chen,. E. Chung, L. Jiang, Least-squares mixed generalized multiscale finite element method, Computer Methods in Applied Mechanics and Engineering, Vol. 311 (1) (2016), 764-787
576. M. Tomaiuolo, L.F. Brass, Joining forces to understand hemostasis and thrombosis: A call to communicate: Comment on "Modeling thrombosis in silico: Frontiers, challenges, unresolved problems and milestones" by A.V. Belyaev et al., Phys Life Rev. (2018), doi: 10.1016/j.plrev.2018.06.019
577. B. Tabatadze, Numerical Approximate Solution Of Some Nonlinear Diffusion Systems, Sokhumi State University, Faculty of Natural Sciences, Mathematics, Technology and Pharmacy, Ph.D. Thesis, 2019
578. P. Guo, K. Huang, Z. Xu, Partial Differential Equations is All You Need for Generating Neural Architectures, researchgate.net, 2021
579. P. Guo, K. Huang, Z. Xu, Partial Differential Equations is All You Need for Generating Neural Architectures -- A Theory for Physical Artificial Intelligence Systems, Cornell University Library, arXiv:2103.08313, 2021

- **J Kraus, M Lymbery, S Margenov, Auxiliary space multigrid method based on additive Schur complement approximation, Numerical Linear Algebra with Applications (2014) DOI: 10.1002/nla.1959**
  <u>In</u>:

580. C. Pechstein, C.R. Dohrmann, A Unified Framework for Adaptive BDDC, RICAM-Report 2016-20, 2016
581. R. Blaheta, T. Luber, Algebraic preconditioning for Biot-Barenblatt poroelastic systems, Applications of Mathematics, Vol. 62 (6) (2017), 561-577
582. M. Buck, O. Iliev, H. Andrä, Domain decomposition preconditioners for multiscale problems in linear elasticity, Numerical Linear Algebra with Applications, https://doi.org/10.1002/nla.2171 , 2018
583. L. Chen, J. Hu, X. Huang, Fast auxiliary space preconditioners for linear elasticity in mixed form, Mathematics of Computation (2018), 1601-1633

584. R. Blaheta, M. Béreš, S. Domesová, P. Pan, A comparison of deterministic and Bayesian inverse with application in micromechanics, Applications of Mathematics, Vol. 63 (6) (2018), 665–686
585. L Chen, J Hu, X Huang, Fast Auxiliary Space Preconditioner for Linear Elasticity in Mixed Form, Mathematics of Computation, Vol. 87 (2018), 1601-1633
586. В.М. Браженко, Очищення робочих рідин повнопотоковим гідродинамічним фільтром з обертовим перфорованим циліндром та бункером для осаду, Дисертації, Сумський державний університет, 2018
587. C. Burstedde, J.A. Fonseca, B. Metsch, An AMG saddle point preconditioner with application to mixed Poisson problems on adaptive quad/cube meshes, Cornell University Library, arXiv preprint arXiv:1901.05830, 2019
588. J.A. Fonseca, Scalable parallel simulation of variably saturated flow, Dissertation zur Erlangung des Doktorgrades der Mathematisch-Naturwissenschaftlichen, Fakultat der Rheinischen Friedrich-Wilhelms-Universit ̈at Bonn, 2019
589. P.B. Ohm, Stabilized Discretizations and Robust Preconditioners for the Poroelastic Equations, PhD Thesis, Tufts University, 2020
590. J. Pearson, J. Pestana, Preconditioners for Krylov subspace methods: an overview, Edinburgh University, GAMM-Mitteilungen/GAMM-Reports, 2020
591. Y. Cao, M. Neytcheva, Cell-by-cell approximate Schur complement technique in preconditioning of meshfree discretized piezoelectric equations, Numerical Linear Algebra with Applications (2021), https://doi.org/10.1002/nla.2362
592. T. Rees, M. Wathen, An element-based preconditioner for mixed finite element problems, SIAM Journal on Scientific Computing, Vol. 43 (5) (2021), DOI:10.1137/20M1336461

- **J. Kraus, R. Lazarov, M. Lymbery, S. Margenov, L. Zikatanov, Preconditioning Heterogeneous H(div) Problems by Additive Schur Complement Approximation and Applications, SIAM J. Sci. Comput., 38(2) (2016), A875–A898**
  In:

593. L. Chen, J. Hu, X. Huan, Fast Auxiliary Space Preconditioner for Linear Elasticity in Mixed Form, Mathematics of Computations, Vol. 87 (2018), 1601-1633
594. L. Chen, J. Hu, X. Huang, Fast auxiliary space preconditioners for linear elasticity in mixed form, Mathematics of Computation (2018), 1601-1633
595. D.S. Oh, O. Widlund, S. Zampini, C. Dohrmann, BDDC algorithms with deluxe scaling and adaptive selection of primal constraints for Raviart-Thomas vector fields, Mathematics of Computation, Vol. 87 (2018), 659-692
596. C. Burstedde, J.A. Fonseca, B. Metsch, An AMG saddle point preconditioner with application to mixed Poisson problems on adaptive quad/cube meshes, Cornell University Library, arXiv preprint arXiv:1901.05830, 2019,
597. J.A. Fonseca, Scalable parallel simulation of variably saturated flow, Dissertation zur Erlangung des Doktorgrades der Mathematisch-Naturwissenschaftlichen, Fakultat der Rheinischen Friedrich-Wilhelms-Universit ̈at Bonn, 2019
598. P.B. Ohm, Stabilized Discretizations and Robust Preconditioners for the Poroelastic Equations, PhD Thesis, Tufts University, 2020
599. J. Pearson, J. Pestana, Preconditioners for Krylov subspace methods: an overview, Edinburgh University, GAMM-Mitteilungen/GAMM-Reports, 2020
600. S. Chen, Q. Hong, J. Xu, K. Yang, Robust block preconditioners for poroelasticity, Computer Methods in Applied Mechanics and Engineering, Vol. 369 (2020), 113229
601. Y. Cao, M. Neytcheva, Cell-by-cell approximate Schur complement technique in preconditioning of meshfree discretized piezoelectric equations, Numerical Linear Algebra with Applications (2021), https://doi.org/10.1002/nla.2362
602. M. Weiss, Implementation of the spectral element method and iterative solution techniques for 3D controlled-source electromagnetic modelling, Doctoral thesis, Uppsala University (2023), urn:nbn:se:uu:diva-495584

- **I. Georgiev, S. Margenov, Semi-coarsening AMLI preconditioning of anisotropic trilinear FEM systems, Computers & Mathematics with Applications, Vol. 68 (12), Part A (2014), 2103–2111**
  <u>In</u>:

603. I. Pultarová, Hierarchical preconditioning for the stochastic Galerkin method: upper bounds to the strengthened CBS constants, Computers & Mathematics with Applications, Vol. 71 (4) (2016), 949–964

- **S. Stoykov, S. Margenov, Nonlinear vibrations of 3D laminated composite beams, Mathematical Problems in Engineering, Article ID 892782 (2014) 14 pages, http://dx.doi.org/10.1155/2014/892782**
  <u>In</u>:

604. Ş.D. Akbaş, Thermal post-buckling analysis of a laminated composite beam, Structural Engineering and Mechanics, Vol. 67 (4) (2018), 337-346
605. A.S. Sayyad, Y.M. Ghugal, Bending, buckling and free vibration of laminated composite and sandwich beams: A critical review of literature, Composite Structures, Vol. 171 (1) (2017), 486–504
606. A.A. Dos Santos, J.D. Hobeck, D.J. Inman, Orthogonal spiral structures for energy harvesting applications: Theoretical and experimental analysis, Journal of Intelligent Material Systems and Structures (2018), https://doi.org/10.1177/1045389X18754346
607. Ş.D. Akbaş, Nonlinear thermal displacements of laminated composite beams, Coupled Systems Mechanics,Vol.7 (6) (2018), 691-705
608. Ş.D. Akbaş, Geometrically nonlinear analysis of a laminated composite beam, Structural Engineering and Mechanics, Vol. 66 (1) (2018), 27-36
609. Ş.D. Akbaş, Post-buckling responses of a laminated composite beam, Steel and Composite Structures, Vol. 26 (6) (2018), 733-743
610. Ş.D. Akbaş, Large deflection analysis of a fiber reinforced composite beam, Steel and Composite Structures, Vol. 27 (5) (2018), 567-576
611. K. Yerrapragada, A. Salehian, Analytical Study of Coupling Effects for Vibrations of Cable-Harnessed Beam Structures, J. Vibrations and Acoustics, Vol, 141(3) (2019), Paper No: VIB-18-1239 https://doi.org/10.1115/1.4042042
612. K. Yerrapragada, Coupled dynamics of cable-harnessed structures: analytical modeling and experimental validation, Theses for Doctor of Philosophy in Mechanical and Mechatronics Engineering, University of Waterloo, 2019
613. G. N. Dar, E. N. Kumar, Cohesive Zone Modeling of Laminated Composite Beam under Mixed Mode Bending Load, Dogo Rangsang Research Journal, Vol. 10 (9.3) (2020), 138-155
614. G. N. Dar, E. N. Kumar, A Review: Cohesive Zone Modeling of Laminated Composite Beam under Mixed Mode Bending Load, Dogo Rangsang Research Journal, Vol. 10 (9.3) (2020), 156-165
615. K. Kim, K. Ri, C. Yun, C. Pak, P. Han, Nonlinear forced vibration analysis of composite beam considering internal damping, Nonlinear Dynamics, Vol. 107 (2022), 3407–3423
616. H. Eipakchi, F. Mahboubi Nasrekani, Linear and nonlinear free vibration analysis of super-light composite beams with honeycomb core layer and adjustable Poisson's ratio using multiple-scale method, Acta Mech, 233 (2022), 4763-4783, https://doi.org/10.1007/s00707-022-03354-9
617. M. Khosravi, S.J. Mehrabadi, K.M. Fard, Vibration Behavior of Thick Sandwich Composite Beam with Flexible Core Resting on Incompressible Fluid Foundation, Journal of Solid Mechanics, Vol. 15 (1) (2023), 50-65

- **R.F. Sviercoski, P. Popov, S. Margenov, An analytical coarse grid operator applied to a multiscale multigrid method, Journal of Computational and Applied Mathematics, Vol. 287 (2015), 207-219**
  <u>In</u>:

618. M. Ramadan, M. Khaled, L. Fourment, Speeding-up simulation of cogging process by multigrid method, Int. J Mater Form (2018). https://doi.org/10.1007/s12289-018-1405-8
619. X. Liu, J. Réthoré, M.-C. Baietto, P. Sainsot, A.A. Lubrecht, An efficient strategy for large scale 3D simulation of heterogeneous materials to predict effective thermal conductivity, Computational Materials Science, Vol. 166 (2019), 265-275
620. M.M. Shahzamanian, W.J. Basirun, Modeling of Cementitious Representative Volume Element with Various Water–Cement Ratios, Journal of Multiscale Modelling (2019), https://doi.org/10.1142/S1756973719500021
621. M. Ramadan, M. Khaled, L. Fourment, Speeding-up simulation of cogging process by multigrid method, International Journal of Material Forming, Vol. 12 (1) (2019), 45–55
622. M. M. Shahzamanian, W. J. Basirun, Modeling of Cementitious Representative Volume Element with Various Water–Cement Ratios, Journal of Multiscale Modelling, Vol. 11 (01) (2020), https://doi.org/10.1142/S1756973719500021
623. S. Meggendorfer, Multilevel Schwarz Methods for Porous Media Problems, Dissertation, Heidelberg (2023), https://archiv.ub.uni-heidelberg.de/volltextserver/33521/

- **S. Stoykov, Manoach, E., Margenov, S.. An efficient 3D numerical beam model based on cross sectional analysis and Ritz approximations. ZAMM - Journal of Applied Mathematics and Mechanics, Vol. 96 (7) (2016), ISSN:15, DOI:10.1002/zamm.201400139, 791-812**
  In:

624. M. Aminbaghai, J. Murin, G. Balduzzi, J. Hrabovsky, G. Hochreiner, H. Mang, Second-order torsional warping theory considering the secondary torsion-moment deformation-effect, Engineering Structures 147 (2017) 724-739
625. M. Lezgy-Nazargah, P. Vidal, O. Polit, A penalty-based multifiber finite element model for coupled bending and torsional-warping analysis of composite beams, European Journal of Mechanics - A/Solids, Vol. 80 (2020), 103915, https://doi.org/10.1016/j.euromechsol.2019.103915
626. M. Lezgy-Nazargah, P. Vidal, O. Polit, A quasi-3D finite element model for the analysis of thin-walled beams under axial–flexural–torsional loads, Thin-Walled Structures, Vol. 164 (2021), 107811, https://doi.org/10.1016/j.tws.2021.107811
627. L. Mao, H. Zhong, Analysis of geometrically exact beams with torsion-warping deformation by weak form quadrature elements, Computers & Structures, Vol. 275 (2023), https://doi.org/10.1016/j.compstruc.2022.106916
628. L. Mao, H. Zhong, Torsional warping analysis of arbitrary beam cross-sections by weak form quadrature elements, Journal of Physics: Conference Series (2023), DOI 10.1088/1742-6596/2519/1/012021

- **S. Stoykov, S. Margenov, Scalable parallel implementation of shooting method for large-scale dynamical systems. Application to bridge components, Journal of Computational and Applied Mathematics, Vol. 293 (2016), 223-231**
  In:

629. V. O. Golubev, D. G. Chistiakov, V. N. Brichk, T.E. Litvinova, Systems and aids of mathematical modeling of the alumina refinery methods: problems and solutions, Automation, Non-ferrous Metals, Vol. 1 (2019), 40–47
630. В.В. Васильев, А.Т. Фёдоров, Т.Е. Литвинов, Развитие средств моделирования процессов и систем глинозёмного производства, Цветные металлы и минералы, Сборник докладов Одиннадцатого международного конгресса (2019), 126-132
631. T.E. Litvinova, V.V. Vasilyev, A.T. Fedorov, Development the means of modeling the processes and the systems of alumina production, TRAVAUX 48, Proceedings of the 37th International ICSOBA Conference and XXV Conference “Aluminium of Siberia”, Krasnoyarsk, Russia (2019), 16 – 20
632. Q. Wang, Y. Liu, H. Liu, H. Fan, M. Jing, Parallel numerical continuation of periodic responses of local nonlinear systems, Nonlinear Dynamics, Vol.100 (2020), 2005–2026

- **R. Blaheta, I. Georgiev, K. Georgiev, O. Jakl, R. Kohut, S. Margenov, J. Starý, Analysis of fiber-reinforced concrete: micromechanics, parameter identification, fast solvers, Proceedings of Third International Workshop on Sustainable Ultrascale Computing Systems (NESUS 2016), Universidad Carlos III de Madrid (2016), 31-36**
In:

633. S.S. Kadam, V.V. Karjinni, C.S. Jarali, Prediction of Fiber Reinforced Concrete Strength Properties by Micromechanics Method, Civil Engineering Journal, Vol. 5 (1) (2019), 200-208

- **V.Kyovtorov, I.Georgiev, S.Margenov, D.Stoychev, F.Oliveri, D.Tarchi, New antenna design approach – 3D polymer printing and metallization. Experimental test at 14–18 GHz, AEU - International Journal of Electronics and Communications, Vol. 73 (2017), 119-128**
In:

634. X. Zhang, Q. Zhang, X. Zhang, Nonuniform antenna array design by parallelizing three-parent crossover genetic algorithm, J Wireless Com Network (2017), doi.org/10.1186/s13638-017-0895-2
635. A. Genc, I.B. Basyigit, B. Colak, S. Helhel, Investigation of the characteristics of low-cost and lightweight horn array antennas with novel monolithic waveguide feeding networks, AEU - International Journal of Electronics and Communications, Vol. 89 (2018),15–23
636. A.A. Kirubaraj, D.J. Moni, D. Devaprakasam, Large scale fabrication of asymmetric 2D and 3D micro/nano array pattern structures using multi-beam interference lithography technique for Solar cell texturing application, Microsyst. Technol. (2018), https://doi.org/10.1007/s00542-018-3742-4
637. K. Ruskova, T. Pavlov, B. Tzaneva, P. Petkov, Electroless Copper Deposition for Antenna Applications, IX National Conference with International Participation (ELECTRONICA) (2018), DOI: 10.1109/ELECTRONICA.2018.8439543
638. D. Shamvedi, O.J. McCarthy, E. O'Donoghue, P. O'Leary, Improving the Strength-to-Weight Ratio of 3-D Printed Antennas: Metal Versus Polymer, IEEE Antennas and Wireless Propagation Letters, Vol. 17 (11) (2018), 2065 – 2069
639. P. Fathi, J. Aliasgari, Design and fabrication of compact 2 × 2 dual linear polarized wideband and high gain array for Ku-band satellite communication application, AEU - International Journal of Electronics and Communications, Vol. 95 (2018), 36-41
640. G. Gorokhov, M. Katsemba, A. Liubimau, A. Lobko, A. Melnikau, Specifics of 3D-Printed Electronics, International Conference on Engineering of Scintillation Materials and Radiation Technologies, Springer Proceedings in Physics, Vol. 227 (2018), 315-326
641. P. Lambin, A.V. Melnikov, M. Shuba, Electrokinetic Properties of 3D-Printed Conductive Lattice Structures, Applied Sciences, Vol. 9(3) (2019(, 541; https://doi.org/10.3390/app9030541
642. L. Polo-López, J.L. Masa-Campos, J.A. Ruiz-Cruz, Reconfigurable H-plane waveguide phase shifters prototyping with additive manufacturing at K-band, International Journal of RF and Microwave Computer-Aided Engineering (2019), https://doi.org/10.1002/mmce.21980
643. N. Chudpooti, S. Praesomboon, N. Duangrit, N. Somjit, P. Akkaraekthalin, An X-band Portable 3D-printed Lens Antenna with Integrated Waveguide Feed for Microwave Imaging, Progress in Electromagnetics Research (PIER), 2019 Photonics & Electromagnetics Research Symposium (The 41st PIERS), EMW Publishing (2019), http://eprints.whiterose.ac.uk/147470/
644. A. Karatay, F. Yaman, Fully 3D Printed Bead-Pull Measurement of an Elliptical Cavity, Book of Full Text Proceedings, Turkish Physical Society, 35th International Physics Congress (TPS35), Vol. 1 (2019), 42-49
645. S.James, S. Birar, R. Parekh, K. Jain, K. George, Preliminary Study on Fractal-Based Monopole Antenna Fabricated Using 3D Polymer Printing and Selective Electrodeposition Process, ASME 2019 14th International Manufacturing Science and Engineering Conference (2019), Paper No: MSEC2019-2901, V001T01A013, https://doi.org/10.1115/MSEC2019-2901
646. A. Karatay, Elliptical cavity designs, fabrications and experiments to investigate cell misalignment and surface roughness effects, Yüksek Lisans Tezleri, Master Thesis, 2019
647. K. Dröder, A.K. Reichler, G. Mahlfeld, M. Droß, R. Gerbers, Scalable Process Chain for Flexible Production of Metal-Plastic Lightweight Structures, Procedia CIRP, Vol. 85 (2019), 195-200

648. N. Chudpooti, S. Praesomboon, N. Duangrit, N. Somjit, P. Akkaraekthalin, An X-band Portable 3D-printed Lens Antenna with Integrated Waveguide Feed for Microwave Imaging, PhotonIcs & Electromagnetics Research Symposium - Spring (PIERS-Spring), Rome, Italy (2019), 487-492, doi: 10.1109/PIERS-Spring46901.2019.9017614.
649. A. Pons-Abenza, J.-M. García-Barceló, A. Romera-Pérez, A. Alvarez-Melcon, F.D. Quesada-Pereira, J. Hinojosa-Jiménez, M. Guglielmi, V.E. Boria Esbert, L. Arche-Andradas, Design and implementation of evanescent mode waveguide filters using dielectrics and additive manufacturing techniques, AEU - International Journal of Electronics and Communications, Vol. 116 (2020), 153065, https://doi.org/10.1016/j.aeue.2020.153065
650. H. García-Martínez, E. Ávila-Navarro, G.Torregrosa-Penalva, E. Bronchalo, C. Blanco-Angulo, M. Bozzi, Multilayered additive-manufactured half-wavelength coupled line filters, AEU - International Journal of Electronics and Communications, Vol. 123 (2020), 153320, https://doi.org/10.1016/j.aeue.2020.153320
651. R. J. Beneck; D. H. Werner, Design of Unintuitive Antenna Geometries Using Additive Manufacturing Techniques, IEEE Antennas and Propagation Society International Symposium (2020), DOI: 10.1109/IEEECONF35879.2020
652. P. Fathi, J. Aliasgari, Design and Fabrication of Compact 2x2 Dual Linear Polarized Wideband and High Gain Array for Ku-Band Satellite Communication Application, researchgate.net, 2020
653. B. Feng, Y. Tu, J. Chen, K.L. Chung, S. Sun, High-performance dual circularly-polarized antenna arrays using 3D printing for 5G millimetre-wave communications, AEU - International Journal of Electronics and Communications, Vol. 130 (2021), 153569
654. H. Dinis, O. Carvalho, J. C. Neto, P. Mendes, R. Nascimento, F. Silva, A novel approach for micro-antenna fabrication onmetal substrate assisted by laser printing forcommunication systems in smart implants, Research Square (2021), https://assets.researchsquare.com/files/rs-355649/v1/21321be7-f953-4f5a-b2c6-ebb5ae0fe1bf.pdf
655. N. Haque, M.Y. Azarfam, H. Noori, Microwave-assisted fracture toughness improvement in additively manufactured polylactic acid–copper composite, Journal of Materials Science, Vol. 56 (2021), 11298–11308
656. J.R. Montejo-Garaia, J.A. Ruiz-CruzbJesús, M. Rebollar, Additive manufacturing of a compact Ku-band orthomode transducer, AEU - International Journal of Electronics and Communications, Vol. 137 (2021), 153798, https://doi.org/10.1016/j.aeue.2021.153798
657. A.E, Ahmed, W.A.E. Ali, S. Das, Quintuple band circular monopole antenna with innovative 3-D printed PLA substrate for wireless applications, Frequenz, 2021, https://doi.org/10.1515/freq-2021-0082
658. R. Salazar, F. Pizarro, D. Vasquez, E. Rajo-Iglesias, Assessment of 3D-printed waveguides using conductive filaments and a chloroform-based smoothing process, Additive Manufacturing, Vol. 51 (2022), 102593
659. M. Almeshehe, N. Murad, M. Rahim, O. Ayop, N. Samsuri, M. Abd. Aziz, M. Osman, Surface roughness impact on the performance of the 3D metal printed waveguide coupler at millimeter-wave band, Engineering Science and Technology, an International Journal, Vol. 35 (2022), 101129
660. G. A. L. Andreatta, N. R. Hendricks, A. Grivel, M. Billod, Grafted-to Polymeric Layers Enabling Highly Adhesive Copper Films Deposited by Electroless Plating on Ultra-Smooth Three-Dimensional-Printed Surfaces, ACS Appl. Electron. Mater, Vol. 4 (4) (2022), 1864-1874
661. A. E. Ahmed, W. A. E. Ali, S. Das, Quintuple band circular monopole antenna with innovative 3-D printed PLA substrate for wireless applications, Frequenz, Vol. 76 (3-4) (2022), 199-207
662. R.J. Beneck, G. Mackertich-Sengerdy, S. Soltani, S.D. Campbell, D.H. Werner, A Shape Generation Method for 3D Printed Antennas With Unintuitive Geometries, IEEE Access, Vol. 10 (2022), 91294-91305, https://ieeexplore.ieee.org/abstract/document/9869638/authors#authors
663. G.A.L. Andreatta, N. Hendricks, A. Grivel, M. Billod, Grafted-to polymeric layers for highly adhesive electroless metal coatings on ultra-smooth 3D printed surfaces, ACS Appl. Electron. Mater, 4(4) (2022), 1864-1874, https://yoda.csem.ch/handle/20.500.12839/1015

664. S. Yamacli, Implementation of a Lightweight and Portable Horn Antenna Using 3-D Printing Technology, Journal of Advanced Research in Natural and Applied Sciences, Vol. 8(3) (2022), 370 -379, https://dergipark.org.tr/en/pub/jarnas/issue/72641/1039348
665. P. Mahouti, A. Belen, O. Tari, M.A. Belen, S. Karahan, S. Koziel, Data-Driven Surrogate-Assisted Optimization of Metamaterial-Based Filtenna Using Deep Learning, Electronics, 12(7) (2023), https://doi.org/10.3390/electronics12071584
666. O.C. Piltan, A. Kizilay, M.A. Belen, P. Mahouti, Data driven surrogate modeling of horn antennas for optimal determination of radiation pattern and size using deep learning, Microwave and Optical Technology Letters (2023), https://doi.org/10.1002/mop.33702
667. K. Gautam, D. Gogoi, T.D. Kongnyui, S. Devi, C. Kumar, M. Kumar, A comprehensive review on surface modifications of polymer-based 3D-printed structures: Metal coating prospects and challenges, Polymers for Advanced Technologies, Vol. 35 (4), (2024), e6369, https://doi.org/10.1002/pat.6369
668. M. Aziz, A. El Hassan, M. Hussein, E. Zaneldin, A.H. Al-Marzouqi, W. Ahmed, Characteristics of antenna fabricated using additive manufacturing technology and the potential applications, Heliyon, n 10, (2024), e27785, https://www.cell.com/action/showPdf?pii=S2405-8440%2824%2903816-7
669. J. Sorocki, I. Piekarz, M. Baranowski, A. Lamecki, A. Cattenone, S. Marconi, G. Alaimo, N. Delmonte, L. Silvestri, M. Bozz, Low-Cost Method for Internal Surface Roughness Reduction of Additively Manufactured All-Metal Waveguide Components, IEEE Transactions on Microwave Theory and Techniques, 2024, doi: 10.1109/TMTT.2024.3361976

- **R. Blaheta, I. Georgiev, K. Georgiev, O. Jakl, R. Kohut, S. Margenov, J. Starý, High Performance Computing Applications: High Performance Computing in Micromechanics with an Application, Cybernetics and Information Technologies, Vol. 17(5) (2017), 5-16**
  In:

670. F. Almeida, P. Silva, F. Araújo, Performance Analysis and Optimization Techniques for Oracle Relational Databases, Cybernetics and Information Technologies, Vol. 19(1) (2019), 1314-4081

- **S. Stoykov, S. Margenov, Numerical methods and parallel algorithms for computation of periodic responses of plates, Journal of Computational and Applied Mathematics, Vol. 310(15) (2017), 200-212**
  In:

671. Q. Wang, Y. Liu, H. Liu, H. Fan, M. Jing, Parallel numerical continuation of periodic responses of local nonlinear systems. Nonlinear Dynamics, Vol. 100 (2020), 2005–2026

- **S. Stoykov, S. Margenov, Finite Element Method for Nonlinear Vibration Analysis of Plates, Innovative Approaches and Solutions in Advanced Intelligent Systems. Studies in Computational Intelligence, Vol. 648 (2016), 17-27**
  In:

672. E. Adah, D. Onwuka, O. Ibearugbulem, C. Okere, Linear and Nonlinear Free Vibration Analysis of Rectangular Plate, Journal of Civil Engineering, Science and Technology, Vol. 12 (1) (2021) 15-25

- **S. Harizanov, R. Lazarov, P. Marinov, S. Margenov, Y. Vutov, Optimal Solvers for Linear Systems with Fractional Powers of Sparse SPD Matrices, Numerical Linear Algebra with Applications, Vol. 25 (5) (2018), https://doi.org/10.1002/nla.2167**
  In:

673. S.L Wu, H. Zhang, T. Zhou, Solving time-periodic fractional diffusion equations via diagonalization technique and multigrid, Numerical Linear Algebra with Applications (2018), https://doi.org/10.1002/nla.2178
674. T. Bærland, M. Kuchta, K.A. Mardal, Multigrid Methods for Discrete Fractional Sobolev Spaces, Cornell University Library, arXiv preprint arXiv:1806.00222, 2018

675. G. Heidel, V. Khoromskaia, B.N. Khoromskij, V. Schulz, Cornell University Library, arXiv preprint arXiv:1809.01971, 2018
676. M. Kuchta, K.-A. Mardal, M. Mortensen, Preconditioning trace coupled 3d-1d systems using fractional Laplacian, Numerical Methods for Partial Differential Equations, Vol. 35 (1) (2019), DOI: 10.1002/num.22304
677. T. Bærland, Preconditioning strategies related to multiphysics problems, Thesis for the degree of Ph.D., Department of Mathematics, University of Oslo, 2018
678. D. Bolin, K. Kirchner, The Rational SPDE Approach for Gaussian Random Fields With General Smoothness, Journal of Computational and Graphical Statistics (2019), https://doi.org/10.1080/10618600.2019.1665537
679. L. Aceto, P. Novati, Rational approximations to fractional powers of self-adjoint positive operators, Numerische Mathematik, Vol. 143 (1) (2019), 1–16
680. G. Heidel, Optimization in Tensor Spaces for Data Science and Scientific Computing, Doctoral Thesis, Universität Trier, 2019
681. A. Oleksiak, L. Lefèvre, P. Alonso, G. da Costa, V. deMaio, N. Frasheri, V. Garcia, J. Guerrero, S. Lafond, A.Lastovetsky, Energy aware ultrascale systems, Ultrascale Computing Systems, Institution of Engineering and Technology (2019), 127-188
682. C. Hofreither, A Unified View of Some Numerical Methods for Fractional Diffusion, RICAM-Report 2019-12, 2019
683. R. Ciegis, P. Vabishchevich, High order numerical schemes for solving fractional powers of elliptic operators, Journal of Computational and Applied Mathematics, Vol. 372 (2020), 112627, https://doi.org/10.1016/j.cam.2019.112627
684. M. Karkulik, J.M. Melenk, H-matrix approximability of inverses of discretizations of the fractional Laplacian, Advances in Computational Mathematics, Vol. 45 (2019), 2893–2919
685. G. Bencheva, N. Kosturski, Y. Vutov, Parallel BURA Based Numerical Solution of Fractional Laplacian with Pure Neumann Boundary Conditions, Large-Scale Scientific Computing, Lecture Notes in Computer Science, Springer Cham, Vol 11958 (2020), 284-291
686. D Bolin, K Kirchner, The SPDE approach for Gaussian random fields with general smoothness, Journal of Computational and Graphical Statistics, Vol. 29 (2020), https://doi.org/10.1080/10618600.2019.1665537
687. C. Hofreither, A Unified View of Some Numerical Methods for Fractional Diffusion, Computers & Mathematics with Applications, Vol. 80 (2) (2020), 332-350
688. R. Čiegis, P.N. Vabishchevich, Two-level schemes of Cauchy problem method for solving fractional powers of elliptic operators, Computers & Mathematics with Applications, Vol. 80 (2) (2020), 305-315
689. P.N. Vabishchevich, Approximation of a fractional power of an elliptic operator, Numerical Linear Algebra with Applications, Vol. 27 (3) (2020), https://doi.org/10.1002/nla.2287
690. S. Güttel, D. Kressner, K. Lund, Limited-memory polynomial methods for large-scale matrix functions, Cornell University Library, arXiv:2002.01682, 2020
691. B. Schmitt, B.N. Khoromskij, V. Khoromskaia, V. Schulz, Tensor Method for Optimal Control Problems Constrained by Fractional 3D Elliptic Operator with Variable Coefficients, Cornell University Library, arXiv:2006.09314, 2020
692. B. Schmitt, B.N. Khoromskij, V. Khoromskaia, V. Schulz, Tensor product method for fast solution of optimal control problems with fractional multidimensional Laplacian in constraints, Journal of Computational Physics, Vol. 424 (2021), 109865, https://doi.org/10.1016/j.jcp.2020.109865
693. T. Danczul, J. Schöberl, A Reduced Basis Method For Fractional Diffusion Operators II, Journal of Numerical Mathematics (2021), https://doi.org/10.1515/jnma-2020-0042
694. G. Heidel, V. Khoromska, B. N. Khoromski, V. Schulz, Tensor product method for fast solution of optimal control problems with fractional multidimensional Laplacian in constraints, Journal of Computational Physics, Vol. 424 (2021), 109865
695. P. N. Vabishchevich, An approximate representation of the solutions of fractional elliptical BVP through the solution of parabolic IVP, Journal of Computational and Applied Mathematics, Vol. 391 (2021), 113460,

696. T. Danczul, C. Hofreither, On Rational Krylov and Reduced Basis Methods for Fractional Diffusion, Journal of Numerical Mathematics, Vol. 30 (2) (2022), 121-140, https://doi.org/10.1515/jnma-2021-0032
697. R. Čiegis, R. Čiegis, I. Dapšys, A Comparison of Discrete Schemes for Numerical Solution of Parabolic Problems with Fractional Power Elliptic Operators, Mathematics, 9(12) (2021), 1344, https://doi.org/10.3390/math9121344
698. B. Schmitt, B. N. Khoromskij, V. Khoromskaia,V. Schulz, Tensor method for optimal control problems constrained by fractional three-dimensional elliptic operator with variable coefficients, Numerical Linear Algebra with Applications, 2021, https://doi.org/10.1002/nla.2404
699. T. Danczul, J. Schöberl, A Reduced Basis Method For Fractional Diffusion Operators, Numerische Mathematik, Vol. 151 (2022), 369-404
700. B. N. Khoromskij, B. Schmitt, V. Schulz, Tensor numerical method for optimal control problems constrained by an elliptic operator with general rank-structured coefficients, Numerical Linear Algebra with Applications, Vol. 29 (1) (2022), e2404
701. L. Aceto, P. Novati, Fast and accurate approximations to fractional powers of operators, IMA Journal of Numerical Analysis, Vol. 42 (2) (2022), 1598-1622
702. L. Aceto, P. Novati, Exponentially Convergent Trapezoidal Rules to Approximate Fractional Powers of Operators, Journal of Scientific Computing, Vol. 91 (2022), 55
703. W. M. Boon, M. Hornkjøl, M. Kuchta, K.-A. Mardal, R. Ruiz-Baier, Parameter-robust methods for the Biot–Stokes interfacial coupling without Lagrange multipliers, Journal of Computational Physics, Vol. 467 (2022), 111464
704. I. Georgieva, C. Hofreither, A Newton's method for best uniform rational approximation, RICAM-Report 2022-02, 2022
705. R. Bulle, A posteriori error estimation for finite element approximations of fractional Laplacian problems and applications to poro–elasticity, Docteur en Sciences de l'Ingénieur, University of Luxembourg, Esch-sur-Alzette, Luxembourg, 2022
706. L. Aceto, Numerical approximations of fractional powers of operators, Numerical Solution of Fractional Differential Equations and Applications, Proceedings of Short Communications, Sozopol, Bulgaria (2022), 1-3
707. R. Čiegis, I. Dapšys, R. Čiegis, A comparison of parallel algorithms for numerical solution of parabolic problems with fractional power elliptic operators, Axioms, Vol. 11(3) (2022), 98; https://doi.org/10.3390/axioms11030098
708. E. Denich, P. Novati, A Gaussian method for the operator square root, Computational Methods in Applied Mathematics (2022), https://doi.org/10.1515/cmam-2022-0033
709. R. Čiegis, I. Dapšys, On a Framework for the Stability and Convergence Analysis of Discrete Schemes for Nonstationary Nonlocal Problems of Parabolic Type, Mathematics, 10(13) (2022), 2155
710. D. Sanz-Alonso, R. Yang, The SPDE Approach to Matérn Fields: Graph Representations, Statist. Sci. 37(4), (2022), 519-540, https://projecteuclid.org/journals/statistical-science/volume-37/issue-4/The-SPDE-Approach-to-Mat%C3%A9rn-Fields-Graph-Representations/10.1214/21-STS838.short
711. J. Markus Melenk, A. Rieder, An exponentially convergent discretization for space–time fractional parabolic equations using hp-FEM, IMA Journal of Numerical Analysis (2022), drac045, https://doi.org/10.1093/imanum/drac045
712. R. Yang, Graph Matérn Fields with Applications in Inverse Problems and Machine Learning, Ph.D. Dissertation, University of Chicago, 2022, https://knowledge.uchicago.edu/record/3950
713. L. Banjai, J. M. Melenk, C. Schwab, Exponential convergence of hp FEM for spectral fractional diffusion in polygons, Numerische Mathematik, vol. 153 (2023), 1-47
714. T. Danczul, C. Hofreither, J. Schöberl, A Unified Rational Krylov Method for Elliptic and Parabolic Fractional Diffusion Problems, Numerical Linear Algebra with Applications, (2023), https://doi.org/10.1002/nla.2488
715. R. Bulle, O. Barrera, S.P.A. Bordas, F. Chouly, J.S. Hale, An a posteriori error estimator for the spectral fractional power of the Laplacian, Computer Methods in Applied Mechanics and

Engineering, Vol. 407 (2023), 115943
716. P.N. Vabishchevich, Exponent splitting schemes for evolution equations with fractional powers of operators, International Journal of Numerical Analysis and Modeling, Vol, 20 (3) (2023), 371-390
717. I. Dapšys, R. Čiegis, Numerical simulation of fractional power diffusion biosensors, Mathematical Modelling and Analysis, Vol. 28 (2) (2023), https://doi.org/10.3846/mma.2023.17583
718. K. J. Koh, F. Cirak, Stochastic PDE representation of random fields for large-scale Gaussian process regression and statistical finite element analysis, Computer Methods in Applied Mechanics and Engineering Vol. 417, Part B, (2023), 116358, https://doi.org/10.1016/j.cma.2023.116358
719. I. Georgieva, C. Hofreither, A Newton method for best uniform rational approximation, Numerical Algorithms, Vol. 93 (2023), 1741–1758, https://link.springer.com/article/10.1007/s11075-022-01487-5
720. E. Denich, P. Novati, A Gaussian Method for the Square Root of Accretive Operators, Computational Methods in Applied Mathematics, vol. 23 (1), (2023), 127-143, https://doi.org/10.1515/cmam-2022-0033
721. B. Duan, Z. Yang, A quadrature scheme for steady-state diffusion equations involving fractional power of regularly accretive operator, SIAM Journal on Scientific Computing, 45 (5) (2023), A2226-A2249, https://epubs.siam.org/doi/full/10.1137/22M1497298
722. Y. Li, L. Zikatanov, C. Zuo, A reduced conjugate gradient basis method for fractional diffusion, SIAM Journal on Scientific Computing, 2024, https://doi.org/10.1137/23M1575913
723. R. Safah, A. Al Juboory, H.K. Zghair, M.A. Abdul-Khaled, A.L. Yaseen, Dynamics and Stability of Interconnected Systems: A Graph-Theoretic Neuromorphic Approach, International Journal of Neutrosophic Science, Vol. 23, No. 02, 2024, 150-155, https://doi.org/10.54216/IJNS.230212
724. L. Aceto, On the Computation of Fractional Powers of Operators, Numerical Methods for Scientific Computations and Advanced Applications, Proceedings of Short Communications, 2024, 1-2, ISBN 978-619-7320-11-4

- **S. Stoykov, C. Hofreither, S. Margenov, Isogeometric analysis for nonlinear dynamics of Timoshenko beams, Numerical Methods and Applications, Springer LNCS 8962 (2015), 138-146**

  In:

725. S.K. Mondal, S. Gondegaon, H.K. Voruganti, A novel method to apply Neumann boundary conditions in the Isogeometric Analysis (IGA) of beam with 1-D formulation, World Journal of Engineering, Vol. 14 (6) (2017), 538-544
726. S. Khatir, M.A. Wahab, D. Boutchicha, R. Capozucca, T. Khatir, Optimization of IGA Parameters Based on Beam Structure Using Cuckoo Search Algorithm, In: Abdel Wahab M. (eds) Proceedings of the 1st International Conference on Numerical Modelling in Engineering. NME 2018. Lecture Notes in Mechanical Engineering. Springer, Singapore (2018), DOI https://doi.org/10.1007/978-981-13-2273-0_29
727. S. Khatir, M.A. Wahab, D. Boutchicha, T. Khatir, Structural health monitoring using modal strain energy damage indicator coupled with teaching-learning-based optimization algorithm and isogoemetric analysis, Journal of Sound and Vibration, Vol. 448 (2019), 230-246
728. B. Borsos, J. Karátson, Robust Iterative Solvers for Gao Type Nonlinear Beam Models in Elasticity, Computational Methods in Applied Mathematics, (2021), https://doi.org/10.1515/cmam-2020-0133
729. F. Sheikhmamoo, H.M. Sedighi, M. Shishesaz, Vibration of size-dependent carbon nanotube-based biosensors in liquid, Modeling and Computation in Vibration Problems, Volume 1 Numerical and semi-analytical methods (2021) 8-1 - 8-30, https://iopscience.iop.org/book/978-0-7503-3483-9
730. B. Borsos, J. Karátson, Robust Iterative Solvers for Gao Type Nonlinear Beam Models in Elasticity, Computational Methods in Applied Mathematics, 2021, https://doi.org/10.1515/cmam-2020-0133

- **R. Čiegis, V. Starikovičius, S. Margenov, R. Kriauzienė, Parallel solvers for fractional power diffusion problems, Concurrency and Computation: Practice and Experience, Vol. 29 (24) (2017), 10.1002/cpe.4216**
  In:

731. A. Bonito, J.P. Borthagaray, R.H.. Nochetto, E. Otarola, A.J. Salgado, Numerical Methods for Fractional Diffusion, Computing and Visualization in Science, Vol. 19 (5–6) (2018), 19–46
732. O. Axelsson, M. Neytcheva, Z.Z. Liang, Parallel solution methods and preconditioners for evolution equations, Mathematical Modelling and Analysis, Vol. 23(2) (2018), 287-308
733. H. Fang, Y. Hu, C. Yu, M. Tie, J. Liu, C. Gong, An efficient radial basis functions mesh deformation with greedy algorithm based on recurrence Choleskey, Journal of Computational Physics. Vol. 377(15) (2019), 183-199
734. A. Oleksiak, L. Lefèvre, P. Alonso, G. da Costa, V. deMaio, N. Frasheri, V. Garcia, J. Guerrero, S. Lafond, A.Lastovetsky, Energy aware ultrascale systems, Ultrascale Computing Systems, Institution of Engineering and Technology (2019), 127-188
735. I. Georgieva, S. Harizanov, C, Hofreither, Iterative low-rank approximation solvers for the extension method for fractional diffusion, Computers & Mathematics with Applications, Vol. 80 (2020), 351-366
736. M. Ramezani, R. Mokhtari, G. Haase, Some high order formulae for approximating Caputo fractional derivatives, Applied Numerical Mathematics, Vol. 153 (2020), 300-318
737. S. Güttel, D. Kressner, K. Lund, Limited-memory polynomial methods for large-scale matrix functions, Cornell University Library, arXiv:2002.01682, 2020
738. R. Bulle, A posteriori error estimation for finite element approximations of fractional Laplacian problems and applications to poro–elasticity, Docteur en Sciences de l'Ingénieur, University of Luxembourg, Esch-sur-Alzette, Luxembourg, 2022

- **S. Stoykov, E. Atanassov, S. Margenov, Efficient sparse matrix-matrix multiplication for computing periodic responses by shooting method on Intel Xeon Phi, AIP Conference Proceedings, Vol. 1773 (1) (2016), 110012**
  In:

739. Karaivanova, V. Alexandrov, T. Gurov, S. Ivanovska, On the Monte Carlo Matrix Computations on Intel MIC Architecture, Cybernetics and Information Technologies, Vol. 17 (5)
740. D. Slavchev, Composite Numerical Methods and Salable Algorithms, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2022 (In Bulgarian)

- **R. Ciegis, V. Staricovicius, S. Margenov, On parallel numerical algorithms for fractional diffusion problems, Proceedings of NESUS Workshop (2016), e-archivo.uc3m.es**
  In:

741. O. Axelsson, M. Neytcheva, Z.Z. Liang, Parallel solution methods and preconditioners for evolution equations, Mathematical Modelling and … (2018)
742. A. Bonito, J.P. Borthagaray, R.H. Nochetto, E. Otárola, A.J. Salgado, Numerical methods for fractional diffusion, Computing and Visualization in Science (2018), DOI https://doi.org/10.1007/s00791-018-0289-y
743. H. Fang, Y. Hu, C. Yu, M. Tie, J. Liu, C. Gong, An efficient radial basis functions mesh deformation with greedy algorithm based on recurrence Choleskey decomposition and parallel computing, Journal of Computational Physics (2018), https://doi.org/10.1016/j.jcp.2018.10.029

- **R. Čiegis, V. Starikovičius, S. Margenov, R. Kriauzienė, A Comparison of Accuracy and Efficiency of Parallel Solvers for Fractional Power Diffusion Problems, Parallel Processing and Applied Mathematics, PPAM 2017, Lecture Notes in Computer Science, Springer Cham, Vol. 10777 (2018), 79-89**
  In:

744. A. Lischke, G. Pang, M. Gulian, F. Song, C. Glusa, X. Zheng, Z. Mao, W, Cai, M. M. Meerschaert, M. Ainsworth, G.E. Karniadakis, What is the fractional Laplacian? A comparative

review with new results, Journal of Computational Physics, Vol. 404 (2020), 109009, https://doi.org/10.1016/j.jcp.2019.109009

745. A. Oleksiak, L. Lefèvre, P. Alonso, G. da Costa, V. deMaio, N. Frasheri, V. Garcia, J. Guerrero, S. Lafond, A.Lastovetsky, Energy aware ultrascale systems, Ultrascale Computing Systems, Institution of Engineering and Technology (2019), 127-188
746. G. Bornia, A. Chierici, S. Ratnavale, A Comparison of Regularization Methods for Boundary Optimal Control Problems, Numerical Analysis and Modeling, Vol. 19 (2-3) (2022), 329–346
747. A. Cortinovis, D. Kressner, Y. Nakatsukasa, Speeding Up Krylov Subspace Methods for Computing f(A)b via Randomization, SIAM Journal on Matrix Analysis and Applications, Vol.. 45 (1), (2024), 10.1137/22M1543458

- **S. Harizanov, R. Lazarov, P. Marinov, S. Margenov, J. Pasciak, Comparison analysis on two numerical methods for fractional diffusion problems based on rational approximations of t^γ, $0<t<1$, 30th Chemnitz Finite Element Symposium, Lecture Notes in Computational Science and Engineering, Vol. 128 (2019), 165-185**
  In:

748. L. Aceto, P. Novati, Rational approximations to fractional powers of self-adjoint positive operators, Numerische Mathematik, Vol. 143 (1) (2019), 1–16
749. L. Aceto, P. Novati, Pade-type approximations to the resolvent of fractional powers of operators, Journal of Scientific Computing, Vol. 83(2020), 13, https://doi.org/10.1007/s10915-020-01198-w
750. C. Hofreither, A Unified View of Some Numerical Methods for Fractional Diffusion, Computers & Mathematics with Applications, Vol. 80 (2) (2020), 332-350
751. P.N. Vabishchevich, Approximation of a fractional power of an elliptic operator, Numerical Linear Algebra with Applications, Vol. 27 (3) (2020), https://doi.org/10.1002/nla.2287
752. L. Aceto, M. Mazza, S. Serra-Capizzano, Fractional Laplace operator in two dimensions, approximating matrices, and related spectral analysis, Calcolo, Vol 57 (27) (2020), https://doi.org/10.1007/s10092-020-00369-3
753. C. Hofreither, An algorithm for best rational approximation based on barycentric rational interpolation, RICAM-Report 2020-37, 2020
754. L. Aceto, P. Novati, Fast and accurate approximations to fractional powers of operators, Cornell University Library, arXiv:2004.09793, 2020
755. C. Hofreither, Fast and stable computation of best rational approximations with applications to fractional diffusion, Numerical Solution of Fractional Differential Equations and Applications, Proceedings of Short Communications (2020), 27-31
756. T. Danczul, C. Hofreither, On Rational Krylov and Reduced Basis Methods for Fractional Diffusion, Journal of Numerical Mathematics, Vol. 30 (2) (2022), 121-140

- **S. Harizanov, S. Margenov, P. Marinov, Y. Vutov, Volume constrained 2-phase segmentation method utilizing a linear system solver based on the best uniform polynomial approximation of $x^{1/2}$, Journal of Computational and Applied Mathematics, Vol. 310 (2017), 115-128**
  In:

757. A. Oleksiak, L. Lefèvre, P. Alonso, G. da Costa, V. deMaio, N. Frasheri, V. Garcia, J. Guerrero, S. Lafond, A.Lastovetsky, Energy aware ultrascale systems, Ultrascale Computing Systems, Institution of Engineering and Technology (2019), 127-188
758. R. Čiegis, P.N. Vabishchevich, Two-level schemes of Cauchy problem method for solving fractional powers of elliptic operators, Computers & Mathematics with Applications, Vol. 80 (2) (2020), 305-315
759. R. Čiegis, R. Čiegis, I. Dapšys, A Comparison of Discrete Schemes for Numerical Solution of Parabolic Problems with Fractional Power Elliptic Operators, Mathematics, 9(12) (2021), 1344, https://doi.org/10.3390/math9121344
760. R Čiegis, I Dapšys, On a Framework for the Stability and Convergence Analysis of Discrete

Schemes for Nonstationary Nonlocal Problems of Parabolic Type, Mathematics, 10(13) (2022), 2155

761. R Čiegis, I Dapšys, On a Framework for the Stability and Convergence Analysis of Discrete Schemes for Nonstationary Nonlocal Problems of Parabolic Type, Mathematics, 10(13) (2022), 2155
762. R Čiegis, I Dapšys, R Čiegis, A comparison of parallel algorithms for numerical solution of parabolic problems with fractional power elliptic operators, Axioms, Vol. 11(3) (2022), 98, https://doi.org/10.3390/axioms11030098
763. I. Dapšys, R. Čiegis, Numerical simulation of fractional power diffusion biosensors, Mathematical Modelling and Analysis, Vol. 28 (2) (2023), https://doi.org/10.3846/mma.2023.17583
764. R. Čiegis, V. Starikovičius, O. Suboč, R. Čiegis, On Construction of Partially Dimension-Reduced Approximations for Nonstationary Nonlocal Problems of a Parabolic Type, Mathematics, Vol. 11 (9), 2023, 10.3390/math11091984, https://doi.org/10.3390/math11091984

- **S. Harizanov, R. Lazarov, P. Marinov, S. Margenov, J. Pasciak, Analysis of numerical methods for spectral fractional elliptic equations based on the best uniform rational approximation, Journal of Computational Physics, Vol. 408 (2020), 109285**
  In:

765. R. Čiegis, P.N. Vabishchevich, Two-level schemes of Cauchy problem method for solving fractional powers of elliptic operators, Computers & Mathematics with Applications (2019), https://doi.org/10.1016/j.camwa.2019.08.012
766. P.N. Vabishchevich, Approximate representation of the solutions of fractional elliptical BVP through the solution of parabolic IVP, Cornell University Library, arXiv:1910.11179, 2019 - arxiv.org, 2019
767. G. Bencheva, N. Kosturski, Y. Vutov, Parallel BURA Based Numerical Solution of Fractional Laplacian with Pure Neumann Boundary Conditions, Large-Scale Scientific Computing, Lecture Notes in Computer Science, Springer Cham, Vol 11958 (2020), 284-291
768. P.N. Vabishchevich, Approximation of a fractional power of an elliptic operator, Numerical Linear Algebra with Applications, Vol. 27 (3) (2020), e2287
769. R. Čiegis, P.N. Vabishchevich, Two-level schemes of Cauchy problem method for solving fractional powers of elliptic operators, Computers & Mathematics with Applications, Vol. 80 (2) (2020), 305-315
770. C. Hofreither, Fast and stable computation of best rational approximations with applications to fractional diffusion, Proceedings of Workshop on Numerical Methods for Fractional Differential Equations with Applications (2020), 27-30
771. T. Danczul, J. Schöberl, A reduced basis method for fractional diffusion operators II, Journal of Numerical Mathematics (2021), https://doi.org/10.1515/jnma-2020-0042
772. C. Hofreither, An algorithm for best rational approximation based on barycentric rational interpolation, Numerical Algorithms (2021), https://doi.org/10.1007/s11075-020-01042-0
773. P.N. Vabishchevich, Splitting schemes for non-stationary problems with a rational approximation for fractional powers of the operator, Applied Numerical Mathematics, Vol. 165 (2021), 414-430
774. P.N. Vabishchevich, An approximate representation of a solution to fractional elliptical BVP via solution of parabolic IVP, Journal of Computational and Applied Mathematics, Vol. 391 (2021), 113460
775. T. Danczul, C. Hofreither, On Rational Krylov and Reduced Basis Methods for Fractional Diffusion, Cornell University Library, arXiv:2102.13540, 2021
776. T. Danczul, C. Hofreither, J. Schöberl, A Unified Rational Krylov Method for Elliptic and Parabolic Fractional Diffusion Problems, Journal of Numerical Mathematics, Vol. 30(2) (2022), 121-140, https://doi.org/10.1515/jnma-2021-0032
777. C. Sheng, D. Cao, J. Shen, Efficient spectral methods for PDEs with spectral fractional Laplacian, Journal of Scientific Computing, Vol. 88 (2021), Article number: 4

778. L. Aceto, P. Novati, Exponentially convergent trapezoidal rules to approximate fractional powers of operators, Cornell University Library, arXiv:2107.05860, 2021
779. L. Aceto, P. Novati, Efficient Approximations for Fractional Powers of Operators, Proceedings of SIMAI 21, Parma, 30 Aug – 3 Sep 2021, (2021), 593-594, https://air.unimi.it/retrieve/handle/2434/886173/1921216/Book_Proceedings_SIMAI2020_21%20%281%29.pdf#page=628
780. T. Danczul, J. Schöberl, A Reduced Basis Method For Fractional Diffusion Operators I, Numerische Mathematik, Vol. 151 (2022), 369-404
781. L. Aceto, P. Novati, Fast and accurate approximations to fractional powers of operators, IMA Journal of Numerical Analysis, Vol. 42 (2) (2022), 1598-1622
782. N. Barakitis, S.-E. Ekström, P. Vassalos, Preconditioners for fractional diffusion equations based on the spectral symbol, Numerical Linear Algebra with Applications (2022), e2441
783. L. Aceto, P. Novati, Exponentially convergent trapezoidal rules to approximate fractional powers of operators, Journal of Scientific Computing, Vol. 91 (2022), 55
784. P. N. Vabishchevich, Factorized Schemes for First and Second Order Evolution Equations with Fractional Powers of Operators, Computational Methods in Applied Mathematics, Vol. 22 (2) (2022), 493-510
785. I. Georgieva, C. Hofreither, A Newton's method for best uniform rational approximation, RICAM-Report 2022-02, 2022
786. L. Aceto, Numerical approximations of fractional powers of operators, Numerical Solution of Fractional Differential Equations and Applications, Proceedings of Short Communications, Sozopol, Bulgaria (2022), 1-3
787. E. Denich, P. Novati, A Gaussian method for the operator square root, Computational Methods in Applied Mathematics (2022), https://doi.org/10.1515/cmam-2022-0033
788. R Čiegis, I Dapšys, On a Framework for the Stability and Convergence Analysis of Discrete Schemes for Nonstationary Nonlocal Problems of Parabolic Type, Mathematics, 10(13) (2022), 2155
789. J. M. Melenk, A. Rieder, An exponentially convergent discretization for space–time fractional parabolic equations using hp-FEM, IMA Journal of Numerical Analysis (2022), drac045, https://doi.org/10.1093/imanum/drac045
790. L. Banjai, J. M. Melenk, C. Schwab, Exponential convergence of hp FEM for spectral fractional diffusion in polygons, Numerische Mathematik, vol. 153 (2023), 1-47
791. T. Danczul, C. Hofreither, J. Schöberl, A Unified Rational Krylov Method for Elliptic and Parabolic Fractional Diffusion Problems, Numerical Linear Algebra with Applications, (2023), https://doi.org/10.1002/nla.2488
792. J. Haubner, F. Neumann, M. Ulbrich, A Novel Density Based Approach for Topology Optimization of Stokes Flow, SIAM Journal on Scientific Computing, Vol. 45 (2) (2023), https://doi.org/10.1137/21M143114X
793. A. Casulli, L. Robol, Low-rank tensor structure preservation in fractional operators by means of exponential sums, BIT Numerical Mathematics, vol. 63 (2023), Article number: 30
794. R. Čiegis, V. Starikovičius, O. Suboč, R. Čiegis, On Construction of Partially Dimension-Reduced Approximations for Nonstationary Nonlocal Problems of a Parabolic Type, Mathematics, 11(9) (2023), https://doi.org/10.3390/math11091984
795. P.N. Vabishchevich, Exponent splitting schemes for evolution equations with fractional powers of operators, International Journal of Numerical Analysis and Modeling, Vol, 20 (3) (2023), 371-390
796. I. Dapšys, R. Čiegis, Numerical simulation of fractional power diffusion biosensors, Mathematical Modelling and Analysis, Vol. 28 (2) (2023), https://doi.org/10.3846/mma.2023.17583
797. I. Georgieva, C. Hofreither, A Newton method for best uniform rational approximation, Numerical Algorithms, Vol. 93 (2023), 1741–1758, https://link.springer.com/article/10.1007/s11075-022-01487-5
798. E. Denich, P. Novati, A Gaussian Method for the Square Root of Accretive Operators, Computational Methods in Applied Mathematics, vol. 23 (1), (2023), 127-143, https://doi.org/10.1515/cmam-2022-0033

799. B. Duan, Z. Yang, A quadrature scheme for steady-state diffusion equations involving fractional power of regularly accretive operator, SIAM Journal on Scientific Computing, 45 (5) (2023), A2226-A2249, https://epubs.siam.org/doi/full/10.1137/22M1497298
800. Y. Li, L. Zikatanov, C. Zuo, A reduced conjugate gradient basis method for fractional diffusion, SIAM Journal on Scientific Computing, 2024, https://doi.org/10.1137/23M1575913
801. Y. Yang, J. Huang, Double fast algorithm for solving time-space fractional diffusion problems with spectral fractional Laplacian, Applied Mathematics and Computation, Vol. 475, 15, 2024, 128715, https://doi.org/10.1016/j.amc.2024.128715
802. L. Aceto, On the Computation of Fractional Powers of Operators, Numerical Methods for Scientific Computations and Advanced Applications, Proceedings of Short Communications, 2024, 1-2, ISBN 978-619-7320-11-4

- **N. Kosturski, S. Margenov. Y. Vutov, Balancing the Communications and Computations in Parallel FEM Simulations on Unstructured Grids, Parallel Processing and Applied Mathematics, Springer LNCS, Vol. 7204 (2011), 211-220**
  In:

803. J. Yu-xi, Z. Hai-bing , X. Jun, Two Types of Contact Parallel Algorithms Based on the Dual Static Domain Decomposition, Gas Physics, Vol. 4 (2) (2019), 44-54

- **R. Čiegis, V. Starikovičius, S. Margenov, R. Kriauzienė, Scalability analysis of different parallel solvers for 3D fractional power diffusion problems, Concurrency and Computation: Practice and Experience,Vol. 31(19) (2019), https://doi.org/10.1002/cpe.5163**
  In:

804. R. Wyrzykowski, B.K. Szymanski, Algorithmic advances in parallel architectures and energy-efficient computing, Concurrency and Computation: Practice and Experience, Vol. 31(19) (2019), https://doi.org/10.1002/cpe.5260
805. G. Bencheva, N. Kosturski, Y. Vutov, Parallel BURA Based Numerical Solution of Fractional Laplacian with Pure Neumann Boundary Conditions, Large-Scale Scientific Computing, Lecture Notes in Computer Science, Springer Cham, Vol 11958 (2020), 284-291
806. F. Andrés, D. Castaño, J. Muñoz, Minimization of the Compliance under a Nonlocal p-Laplacian Constraint, Mathematics, Vol. 11 (7) (2023), https://doi.org/10.3390/math11071679

- **N Kosturski, S Margenov, Y Vutov, Performance analysis of MG preconditioning on Intel Xeon Phi: towards scalability for extreme scale problems with fractional Laplacians, Large-Scale Scientific Computing. LSSC 2017, Springer LNCS, Vol. 10665 (2018), 304-312**
  In:

807. I. Georgieva, S. Harizanov, C, Hofreither, Iterative low-rank approximation solvers for the extension method for fractional diffusion, Computers & Mathematics with Applications, Vol. 80 (2020), 351-366
808. D. Slavchev, Composite Numerical Methods and Salable Algorithms, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2022 (In Bulgarian)

- **R. Blaheta, I. Georgiev, K. Georgiev, O. Jakl, R. Kohut, S. Margenov, J. Starý, High Performance Computing in Micromechanics with an Application, Cybernetics and Information Technologies, Vol. 17(5) (2017), 5-16**
  In:

809. F. Almeida, P. Silva, F. Araújo, Performance Analysis and Optimization Techniques for Oracle Relational Databases, Cybernetics and Information Technologies, Vol. 19(2) (2019), DOI: 10.2478/cait-2019-0019

- **S. Harizanov, S. Margenov, Positive Approximations of the Inverse of Fractional Powers of SPD M-Matrices, Control Systems and Mathematical Methods in Economics, Lecture Notes in Economics and Mathematical Systems, Springer, Cham., Vol 687 (2018) https://doi.org/10.1007/978-3-319-75169-6_8**
  In:

810. R. Čiegis, P.N. Vabishchevich, Two-level schemes of Cauchy problem method for solving fractional powers of elliptic operators, Computers & Mathematics with Applications (2019), https://doi.org/10.1016/j.camwa.2019.08.012
811. B. Keith, U. Khristenko, B. Wohlmuth, A fractional PDE model for turbulent velocity fields near solid walls, Journal of Fluid Mechanics, 916 (2021), A21, doi:10.1017/jfm.2021.182
812. L. Aceto, P. Novati, Efficient Approximations for Fractional Powers of Operators, Proceedings of SIMAI 21, Parma, 30 Aug – 3 Sep 2021, (2021), 593-594, https://air.unimi.it/retrieve/handle/2434/886173/1921216/Book_Proceedings_SIMAI2020_21%20%281%29.pdf#page=628
813. L. Aceto, P. Novati, Fast and accurate approximations to fractional powers of operators, IMA Journal of Numerical Analysis, Vol. 4 (2) (2022), 1598-1622
814. L. Aceto, P. Novati, Exponentially convergent trapezoidal rules to approximate fractional powers of operators, Journal of Scientific Computing, Vol. 91 (2022), 55
815. L. Aceto, Numerical approximations of fractional powers of operators, Numerical Solution of Fractional Differential Equations and Applications, Proceedings of Short Communications, Sozopol, Bulgaria (2022), 1-3
816. E. Denich, P. Novati, A Gaussian Method for the Square Root of Accretive Operators, Computational Methods in Applied Mathematics (2022), https://doi.org/10.1515/cmam-2022-0033
817. U. Khristenko, B. Wohlmuth, Solving time-fractional differential equation via rational approximation, *IMA Journal of Numerical Analysis*, Vol. 43(3) (2023), 1263-1290
818. J. Andrej, N. Atallah, J.-P. Bäcker, J. Camier, D. Copeland, V. Dobrev, Y. Dudouit, T. Duswald, B. Keith, D. Kim, T. Kolev, B. Lazarov, K. Mittal, W. Pazner, S. Petrides, S. Shiraiwa, M. Stowell, V. Tomov, High-performance finite elements with MFEM, arXiv:2402.15940, (2024), https://doi.org/10.48550/arXiv.2402.15940
819. L. Aceto, On the Computation of Fractional Powers of Operators, Numerical Methods for Scientific Computations and Advanced Applications, Proceedings of Short Communications, 2024, 1-2, ISBN 978-619-7320-11-4

- **S. Harizanov, R. Lazarov, S. Margenov, P. Marinov, Numerical solution of fractional diffusion–reaction problems based on BURA, Computers & Mathematics with Applications, Vol. 80 (2) (2020), 316-331**
  In:

820. T. Ban, Y. Wang, Numerical Simulation of the Brusselator Model with Spatial Spectral Interpolation Coordination Method, Advances in Applied Mathematics, 9(5) (2020), 708-721
821. G. Maros, F. Izsák, Finite element methods for fractional-order diffusion problems with optimal convergence order, Computers & Mathematics with Applications, Vol. 80(10) (2020), 2105-2114
822. P.N. Vabishchevich, Splitting schemes for non-stationary problems with a rational approximation for fractional powers of the operator, Applied Numerical Mathematics, Vol. 165 (2021), 414-430
823. D. Bertaccini, F. Durastante, Nonlocal diffusion of variable order on graphs, Cornell University Library, arXiv:2110.05424, 2021
824. G. Maros, F. Izsák, Numerical Solution of Fractional Elliptic Problems with Inhomogeneous Boundary Conditions, Fractal and Fractional, Vol. 5 (3) (2021), 10.3390/fractalfract5030075
825. P.N. Vabishchevich, Factorized Schemes for First and Second Order Evolution Equations with Fractional Powers of Operators, Computational Methods in Applied Mathematics, (2021), https://doi.org/10.1515/cmam-2021-0073
826. X.L. Zhang, W. Zhang, Y.L. Wang, T.T. Ban, The space spectral interpolation collocation method for reaction-diffusion systems, Thermal Science, Vol. 25(2B) (2021), 1269-1275

827. P.N. Vabishchevich, Factorized Schemes for First and Second Order Evolution Equations with Fractional Powers of Operators, Computational Methods in Applied Mathematics, (2021), https://doi.org/10.1515/cmam-2021-0073
828. R Čiegis, I Dapšys, On a Framework for the Stability and Convergence Analysis of Discrete Schemes for Nonstationary Nonlocal Problems of Parabolic Type, Mathematics, 10(13) (2022), 2155
829. R. Bulle, A posteriori error estimation for finite element approximations of fractional Laplacian problems and applications to poro–elasticity, Docteur en Sciences de l'Ingénieur, University of Luxembourg, Esch-sur-Alzette, Luxembourg, 2022
830. D. Bertaccini, F. Durastante, Nonlocal diffusion of variable order on complex networks, International Journal of Computer Mathematics: Computer Systems Theory, Vol. 7 (3), (2022), https://doi.org/10.1080/23799927.2022.2114381
831. P.N. Vabishchevich, Exponent splitting schemes for evolution equations with fractional powers of operators, International Journal of Numerical Analysis and Modeling, Vol, 20 (3) (2023), 371-390
832. B. Duan, Z. Yang, A quadrature scheme for steady-state diffusion equations involving fractional power of regularly accretive operator, SIAM Journal on Scientific Computing, 45 (5) (2023), A2226-A2249, https://epubs.siam.org/doi/full/10.1137/22M1497298
833. Y. Yang, J. Huang, Double fast algorithm for solving time-space fractional diffusion problems with spectral fractional Laplacian, Applied Mathematics and Computation, Vol. 475 (15), (2024), 128715, https://doi.org/10.1016/j.amc.2024.128715
834.

- **S. Harizanov, R. Lazarov, S. Margenov, P. Marinov, The Best Uniform Rational Approximation: Applications to Solving Equations Involving Fractional powers of Elliptic Operators, arXiv:1910.13865, 2019**
  In:

835. C. Hofreither, An algorithm for best rational approximation based on barycentric rational interpolation, RICAM-Report 2020-37, 2020
836. C. Hofreither, Fast and stable computation of best rational approximations with applications to fractional diffusion, Numerical Solution of Fractional Differential Equations and Applications, Proceedings of Short Communications (2020), 27-31
837. P.N. Vabishchevich, Splitting schemes for non-stationary problems with a rational approximation for fractional powers of the operator, Applied Numerical Mathematics, Vol. 165 (2021), 414-430
838. X.L. Zhang, W. Zhang, Y.L. Wang, T.T. Ban, The space spectral interpolation collocation method for reaction-diffusion systems, Thermal Science, Vol. 25 (2B) (2021), 1269-1275
839. C. Hofreither, An algorithm for best rational approximation based on barycentric rational interpolation, Numerical Algorithms (2021), https://doi.org/10.1007/s11075-020-01042-0
840. T. Danczul, C. Hofreither, On Rational Krylov and Reduced Basis Methods for Fractional Diffusion, Journal of Numerical Mathematics, Vol. 30 (2) (2022), 121-140 https://doi.org/10.1515/jnma-2021-0032
841. T. Danczul, C. Hofreither, J. Schöberl, A Unified Rational Krylov Method for Elliptic and Parabolic Fractional Diffusion Problems, Cornell University Library, arXiv:2103.13068, 2021
842. R. Bulle, A posteriori error estimation for finite element approximations of fractional Laplacian problems and applications to poro–elasticity, Docteur en Sciences de l'Ingénieur, University of Luxembourg, Esch-sur-Alzette, Luxembourg, 2022
843. I. Georgieva, C. Hofreither, A Newton's method for best uniform rational approximation, RICAM-Report 2022-02, 2022
844. T. Danczul, C. Hofreither, J. Schöberl, A Unified Rational Krylov Method for Elliptic and Parabolic Fractional Diffusion Problems, Numerical Linear Algebra with Applications, (2023), https://doi.org/10.1002/nla.2488
845. I. Georgieva, C. Hofreither, A Newton method for best uniform rational approximation, Numerical Algorithms, 93, pages1741–1758 (2023), https://doi.org/10.1007/s11075-022-01487-5

846. Y. Yang, J. Huang, Double fast algorithm for solving time-space fractional diffusion problems with spectral fractional Laplacian, Applied Mathematics and Computation, Vol. 475 (15) (2024), 128715, https://doi.org/10.1016/j.amc.2024.128715

- **S. Harizanov, R. Lazarov, S. Margenov, P. Marinov, J. Pasciak, Comparison Analysis of Two Numerical Methods for Fractional Diffusion Problems Based on the Best Rational Approximations of t^{γ} on [0, 1], In: Apel T., Langer U., Meyer A., Steinbach O. (eds) Advanced Finite Element Methods with Applications. FEM 2017. Lecture Notes in Computational Science and Engineering, vol 128. Springer, Cham. https://doi.org/10.1007/978-3-030-14244-5_9**
  In:

847. L. Aceto, P. Novati, Fast and accurate approximations to fractional powers of operators, Cornell University Library, arXiv:2004.09793, 2020
848. L. Aceto, Fast approximations of fractional powers of operators, Proceedings of Workshop on Numerical Solution of Fractional Differential Equations and Applications (2020), 1-3
849. X. Antoine, E. Lorin, ODE-based double-preconditioning for solving linear systems $A^{\alpha}x=b$ and $f(A)x=b$, Numerical Linear Algebra with Applications, Vol. 28 (6) (2021), e2399, https://doi.org/10.1002/nla.2399
850. L. Aceto, P. Novati, Efficient Approximations for Fractional Powers of Operators, Proceedings of SIMAI 21, Parma, 30 Aug – 3 Sep 2021, (2021), 593-594, https://air.unimi.it/retrieve/handle/2434/886173/1921216/Book_Proceedings_SIMAI2020_21%20%281%29.pdf#page=628
851. L. Aceto, P. Novati, Exponentially convergent trapezoidal rules to approximate fractional powers of operators, Journal of Scientific Computing, Vol. 91 (2022), 55
852. L. Aceto, P. Novati, Fast and accurate approximations to fractional powers of operators, IMA Journal of Numerical Analysis, Vol. 42 (2) (2022), 1598–1622
853. L. Aceto, Numerical approximations of fractional powers of operators, Numerical Solution of Fractional Differential Equations and Applications, Proceedings of Short Communications, Sozopol, Bulgaria (2022), 1-3
854. E. Denich, P. Novati, A Gaussian Method for the Square Root of Accretive Operators, Computational Methods in Applied Mathematics (2022), https://doi.org/10.1515/cmam-2022-0033
855. L. Aceto, On the Computation of Fractional Powers of Operators, Numerical Methods for Scientific Computations and Advanced Applications, Proceedings of Short Communications, 2024, 1-2, ISBN 978-619-7320-11-4

- **I. Dimov, I. Lirkov, S. Margenov, Z. Zlatev, Numerical Methods and Applications: 5th International Conference, NMA 2002, Borovets, Bulgaria, August 20-24, 2002, Revised Papers, Springer Science & Business Media, Vol. 2542, (2003), http://www.springer.de**

In:

856. A. Fels, Development of an algorithm for the taktline layout of synchronized job shop production. Apprimus Wissenschaftsverlag, 2019.

- **S. Harizanov, R. Lazarov, S. Margenov, P. Marinov, A survey on numerical methods for spectral Space-Fractional diffusion problems, Fractional Calculus and Applied Analysis, Vol. 23 (6) (2020), 1605-1646**
  In:

857. В.И. Васильев, А.М. Кардашевский, Численная идентификация порядка дробной производной по времени модели субдиффузии, Математические заметки СВФУ, Том 27 (4) (2020), 60-71
858. P.N. Vabishchevich, Splitting schemes for non-stationary problems with a rational

approximation for fractional powers of the operator, Applied Numerical Mathematics, Vol. 165, (2021), 414-430
859. B.N. Khoromskij, B. Schmitt, V. Schulz, Tensor numerical method for optimal control problems constrained by an elliptic operator with general rank-structured coefficients, Cornell University Library, arXiv:2105.13206, 2021
860. P.N. Vabishchevich, Factorized Schemes for First and Second Order Evolution Equations with Fractional Powers of Operators, Computational Methods in Applied Mathematics, (2021), https://doi.org/10.1515/cmam-2021-0073
861. B. Duan, Padé-parametric FEM approximation for fractional powers of elliptic operators on manifolds, Cornell University Library, arXiv:2206.15004 (2022)
862. X. Zhao, C. Li, J. Wu, X. Li, Riemannian Manifold-Based Feature Space and Corresponding Image Clustering Algorithms, IEEE Transactions on Neural Networks and Learning Systems (2022), doi: 10.1109/TNNLS.2022.3190836
863. P.N. Vabishchevich, Some methods for solving equations with an operator function and applications for problems with a fractional power of an operator, Journal of Com, putational and Applied Mathematics, Journal of Computational and Applied Mathematics, Vol. 407 (2022), 114096
864. D. Slavchev, Composite Numerical Methods and Salable Algorithms, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2022 (In Bulgarian)
865. E. Denich, P. Novati, A Gaussian Method for the Square Root of Accretive Operators, Computational Methods in Applied Mathematics (2022), https://doi.org/10.1515/cmam-2022-0033
866. D. Slavchev, Composite Numerical Methods and Scalable Tile Algorithms, Biomath Communications, Vol. 9 No. 2 (2022), https://doi.org/10.55630/bmc.2022.08.159
867. A. Casulli, L. Robol, Low-rank tensor structure preservation in fractional operators by means of exponential sums, BIT Numerical Mathematics, vol. 63 (2023), Article number: 30
868. P.N. Vabishchevich, Exponent splitting schemes for evolution equations with fractional powers of operators, International Journal of Numerical Analysis and Modeling, Vol, 20 (3) (2023), 371-390
869. E. Denich, P. Novati, A Gaussian Method for the Square Root of Accretive Operators, Computational Methods in Applied Mathematics, Vol. 23 (1) (2023), 127-143. https://doi.org/10.1515/cmam-2022-0033
870. Z. Hao, Fractional-Order Dependent Radial Basis Functions Meshless Methods for the Integral Fractional Laplacian, SSRN 4627913 (2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4627913
871. B. Duan, Z. Yang, A quadrature scheme for steady-state diffusion equations involving fractional power of regularly accretive operator, SIAM Journal on Scientific Computing, 45 (5) (2023), A2226-A2249, https://epubs.siam.org/doi/full/10.1137/22M1497298
872. M.B., Hafeez, M. Krawczuk, Fractional Spectral and Fractional Finite Element Methods: A Comprehensive Review and Future Prospects, Arch. Computat. Methods Eng., (2024), https://doi.org/10.1007/s11831-024-10083-w
873. Q. Zhuang, A. Heryudono, F. Zeng, Z. Zhang, Collocation methods for integral fractional Laplacian and fractional PDEs based on radial basis functions, Applied Mathematics and Computation, Vol. 469 (15), (2024), 128548, https://doi.org/10.1016/j.amc.2024.128548

- **S. Margenov, N. Popivanov, I. Ugrinova, S. Harizanov, T. Hristov, Mathematical and computer modeling of COVID-19 transmission dynamics in Bulgaria by time-depended inverse SEIR model, AIP Conference Proceedings 2333 (2021), 090024**
  In:

874. M. Ivanova, L. Dospatliev, Data Analytics and SIR Modeling of COVID-19 in Bulgaria, International Journal of Applied Mathematics, Vol. 33 (6) (2020), DOI: 10.12732/ijam.v33i6.10
875. С.И. Кабанихин, М.А. Бектемесов, Ж.М. Бектемесов, Математическая модель по среднесрочным прогнозам COVID-19 в Казахстане, Вестник КазНУ, Серия математика, механика, информатика, [S.l.], 111 (3) (2021), 95-106
876. Ж.М. Бектемесов, С.И. Кабанихин, С.Е. Касенов, О численном моделировании обратной

задачи эпидемиологии, Вычислительная математика и математическое моделирование, 75 (3) (2021), https://doi.org/10.51889/2021-3.1728-7901.01

877. S.-M. Gurova, COVID-19: Study of the spread of the pandemic in Bulgaria. 22nd European Young Statisticians Meeting-Proceedings, (eds.: A. Makridis, F. S. Milienos, P. Papastamoulis, Chr. Parpoula & A. Rakitzis), Dep. of Psychology & Dep. of Sociology, School of Social Sci, Athens, Greece, 2021, 30-34
878. O.I. Krivorotko, S.I. Kabanikhin, Mathematical models of COVID-19 spread, Cornell University Library, arXiv:2112.05315, (2021) https://arxiv.org/abs/2112.05315
879. Ж.М. Бектемесов, С.И. Кабанихин, С.Е.Касенов, О численном моделировании обратной задачи эпидемиологии, Вестник КазНУ. Серия математика, механика, информатика, №3(75), (2021), https://doi.org/10.51889/2021-3.1728-7901.01
880. R. A. Singh, R. Lal, R. R. Kotti, Time-discrete SIR model for COVID-19 in Fiji, Epidemiology & Infection, Vol. 150 (2022) , e75, DOI: https://doi.org/10.1017/S0950268822000590
881. R. M. Kovacevic, N. I. Stilianakis, V. M. Veliov, A Distributed Optimal Control Model Applied to COVID-19 Pandemic, SIAM Journal on Control and Optimization, Vol. 60 (2) (2022), https://doi.org/10.1137/20M1373840
882. S.G. Georgiev, L.G. Vulkov, Identification of COVID–19 dynamics and economic impact for a fractional SEIR mode, AIP Conference Proceedings, Vol. 2505 (1), 10.1063/5.0101044, https://doi.org/10.1063/5.0101044
883. A. B. Borisenko, V. A. Nemtinov, A. A. Borisenko, Application of the Stochastic SIR Model for Simulation of the Epidemic Process, Вестник Тамбовского государственного технического университетас(2023), http://vestnik.tstu.ru/rus/t_29/pdf/29_1_2023_all.pdf#page=49
884. О. Н. Криворотько, С. И. Кабанихин, О математическом моделировании COVID-19, Siberian Electronic Mathematical Reports, Том 20, №2, стр. 1211–1268 (2023), http://semr.math.nsc.ru/v20/n2/p1211-1268.pdf
885. O. Krivorotko, S. Kabanikhin, Artificial intelligence for COVID-19 spread modeling, Journal of Inverse and Ill-posed Problems, vol. 32, no. 2, 2024, pp. 297-332. https://doi.org/10.1515/jiip-2024-0013
886. Z. Li, L. Pei, G. Duan, S. Chen, A non-autonomous time-delayed SIR model for COVID-19 epidemics prediction in China during the transmission of Omicron variant, Electronic Research Archive, 32(3), (2024), 2203–2228, DOI:10.3934/era.2024100
887. T.T. Marinov, R.S. Marinova, N. Shelby, Two Approaches for Identifying Epidemiological Parameters Illustrated with COVID-19 Data for Bulgaria. Large-Scale Scientific Computations. LSSC 2023. Lecture Notes in Computer Science, vol 13952. Springer, Cham., (2024), https://doi.org/10.1007/978-3-031-56208-2_36

- **S. Harizanov, S. Margenov, N. Popivanov, Spectral Fractional Laplacian with Inhomogeneous Dirichlet Data: Questions, Problems, Solutions, Advanced Computing in Industrial Mathematics. BGSIAM 2018. Studies in Computational Intelligence, Vol 961. Springer, Cham (2021), https://doi.org/10.1007/978-3-030-71616-5_13**
  In:

888. G. Maros, F. Izsák, Numerical Solution of Fractional Elliptic Problems with Inhomogeneous Boundary Conditions, Fractal and Fractional, 5(3) (2021), 75, https://doi.org/10.3390/fractalfract5030075
889. R. Bulle, O. Barrera, S. P. A. Bordas, F. Chouly, J. S. Hale, An a posteriori error estimator for the spectral fractional power of the Laplacian, Cornell University Library, arXiv:2202.05810
890. D. Slavchev, Composite Numerical Methods and Salable Algorithms, Thesis, Institute for Parallel Processing, Bulgarian Academy of Sciences, Sofia, 2022 (In Bulgarian)
891. I. Georgiev, HPC biomedical simulations based on CT data, Biomath Communications, Vol. 3(1), 201
892. R. Bulle, O. Barrera, S.P.A. Bordas, F. Chouly, J.S. Hale, An a posteriori error estimator for the spectral fractional power of the Laplacian, Computer Methods in Applied Mechanics and Engineering, Vol. 407 (2023), 115943

- **S. Stoykov, S. Margenov, Finite Element Method for Nonlinear Vibration Analysis of Plates, Innovative Approaches and Solutions in Advanced Intelligent Systems. Studies in Computational Intelligence, vol 648 (2016), Springer, Cham, https://doi.org/10.1007/978-3-319-32207-0_2**
  In:

893. E. Adah, D. Onwuka, O. Ibearugbulem, C. Okere, Linear and nonlinear free vibration analysis of rectangular plate, Journal of civil engineering, science and technology, Vol. 12 (1) (2021), DOI: https://doi.org/10.33736/jcest.3338.2021

- **S. Harizanov, N. Kosturski, I. Lirkov, S. Margenov, Y. Vutov, Reduced multiplicative (BURA-MR) and additive (BURA-AR) best uniform rational approximation methods and algorithms for fractional elliptic equations, Fractal and Fractional, Vol. 5 (2021), 61**
  In:

894. T. Danczul, Model Order Reduction for Fractional Diffusion Problems, Dissertation, TU Wien, 2021
895. R Čiegis, I Dapšys, On a Framework for the Stability and Convergence Analysis of Discrete Schemes for Nonstationary Nonlocal Problems of Parabolic Type, Mathematics, 10(13) (2022), 2155
896. I. Dapšys, R. Čiegis, Numerical simulation of fractional power diffusion biosensors, Mathematical Modelling and Analysis, Vol. 28 (2) (2023), https://doi.org/10.3846/mma.2023.17583

- **S. Margenov, Y. Vutov, Parallel MIC (0) preconditioning for numerical upscaling of anisotropic linear elastic materials, Large-Scale Scientific Computing. LSSC 2009. Lecture Notes in Computer Science, Vol. 5910. Springer, Berlin, Heidelberg (2010), 805-812, https://doi.org/10.1007/978-3-642-12535-5_96**
  In:

897. Y. Yang, S. Fu, E.T. Chung, An Adaptive Generalized Multiscale Finite Element Method Based Two-Grid Preconditioner for Large Scale High-Contrast Linear Elasticity Problems, J Sci Comput, 92, 21 (2022), https://doi.org/10.1007/s10915-022-01869-w

- **S. Margenov, N. Popivanov, I. Ugrinova, T. Hristov, Mathematical Modeling and Short-Term Forecasting of the COVID-19 Epidemic in Bulgaria: SEIRS Model with Vaccination, Mathematics, Vol. 10 (15) (2022), https://doi.org/10.3390/math10152570**
  In:

898. N.K. Vitanov, Z.I. Dimitrova, Computation of the Exact Forms of Waves for a Set of Differential Equations Associated with the SEIR Model of Epidemics, Computation Vol. 11 (7) (2023), 10.3390/computation11070129
899. W.G. Alharbi, A.F. Shater, A. Ebaid, C. Cattani, M. Areshi, M.M. Jalal, M.K. Alharbi, Communicable disease model in view of fractional calculus, AIMS Mathematics, 8(5) (2023), 10033-10048
900. N.K Vitanov, K.N Vitanov, Epidemic Waves and Exact Solutions of a Sequence of Nonlinear Differential Equations Connected to the SIR Model of Epidemics, Entropy, Vol. 25 (3) (2023), 10.3390/e25030438
901. H.K. Al-Jeaid, On Solving the System of Ordinary Differential Equations of the Nonlinear COVID-19 Model, Advances and Applications in Mathematical Sciences, Vol. 22 (4) (2023), 809-823
902. T.T. Marinov, R.S. Marinova, R.T. Marinov, N. Shelby, Novel Approach for Identification of Basic and Effective Reproduction Numbers Illustrated with COVID-19, Viruses, Vol. 15 (6) (2023), 10.3390/v15061352, https://doi.org/10.3390/v15061352
903. A.J. Abougarair, S.E. Elwefati, Identification and Control of Epidemic Disease Based Neural

Networks and Optimization Technique, International Journal of Robotics and Control Systems, Vol. 3 (4), (2023), https://doi.org/10.31763/ijrcs.v3i4.1151
904. Y. Al-Hadeethi, I.F. El Ramley, H. Mohammed, N.M. Bedaiwi, A.Z. Barasheed, A Novel Computational Instrument Based on a Universal Mixture Density Network with a Gaussian Mixture Model as a Backbone for Predicting COVID-19 Variants' Distributions, Mathematics, Vol. 12 (8), (2024), 10.3390/math12081254
905. T.T. Marinov, R.S. Marinova, N. Shelby, Two Approaches for Identifying Epidemiological Parameters Illustrated with COVID-19 Data for Bulgaria. Large-Scale Scientific Computations. LSSC 2023. Lecture Notes in Computer Science, vol 13952. Springer, Cham., (2024), https://doi.org/10.1007/978-3-031-56208-2_36
906. M. Riaz, F. A. Alqarni, K. Aldwoah, F. M. Osman Birkea, Analyzing a Dynamical System with Harmonic Mean Incidence Rate Using Volterra–Lyapunov Matrices and Fractal-Fractional Operators, Fractal and Fractional, Vol. 8 (6), (2024), 10.3390/fractalfract8060321

- **S. Margenov, N. Popivanov, I. Ugrinova, T. Hristov, Differential and Time-Discrete SEIRS Models with Vaccination: Local Stability, Validation and Sensitivity Analysis Using Bulgarian COVID-19 Data, Mathematics, 11(10), (2023), 2238; https://doi.org/10.3390/math11102238**
  In:

907. S. Saharan, C. Tee, A COVID-19 vaccine effectiveness model using the susceptible-exposed-infectious-recovered model, Healthcare Analytics, Vol. 4, (2023), 100269, https://doi.org/10.1016/j.health.2023.100269
908. C.M .Verrelli, F.D. Rossa, New Challenges in Mathematical Modelling and Control of COVID-19 Epidemics: Analysis of Non-Pharmaceutical Actions and Vaccination Strategies, Mathematics, (2024), file:///C:/Users/98/Downloads/mathematics-12-01353-v3.pdf

София
юни 2024 г.