# Publications and Citations

Róbert Horváth

September, 2015

## LIST OF PUBLICATIONS[1]

## A – Referred scientific papers

A1. Faragó I, Horváth R, *An Optimal Mesh Choice in the Numerical Solution of the Heat Equation* COMPUT MATH APPL 38: 79-85 (1999)
IF: 0.314

A2. Horváth R, *Maximum Norm Contractivity in the Numerical Solution of the One-Dimensional Heat Equation* APPL NUMER MATH 31: 451-462 (1999)
IF: 0.765

Horváth R, Maximum Norm Contractivity Bounds of the Numerical Solution of the Heat Equation, conference talk, VI. International Conference on Numerical Methods, Miskolc, Hungary, (1994)

A3. Horváth R, Németh L, Szalay L, Závoti J, *Introduction to Fractal Geometry* GEOMATIKAI KÖZLEMÉNYEK 1: 312-327 (1999)

A4. Horváth R, *On the Positivity of Iterative Methods* ANN UNIV SCI BP R EÖTVÖS NOM SECT COMPUT 19: 93-102 (2000)

Horváth R, On the Positivity of Iterative Methods, TDK dolgozat, ELTE TTK, 1995. (Paper submitted to Scientific Conference of Students.)

Horváth R, Az iterációs módszerek nemnegativitásáról, elöadás, Országos Tudományos Diákköri Konferencia, Természettudományi Szekció Matematika Alszekciója, Analízis Tagozat, Gödöllö, Hungary (1995) (in Hungarian, On the Positivity of Iterative Methods, conference talk, Scientific Conference of Students.)

A5. Horváth R, *On the Sign-Stability of the Numerical Solution of the Heat Equation* PUMA 11: 281-291 (2000)

Horváth R, On the Sign-Stability of the Numerical Solution of the Heat Equation, conference talk, Third Joint Conference on Mathematics and Computer Science, Visegrád, Hungary (1999)

A6. Horváth R, *Some Integral Properties of the Heat Equation* COMPUT MATH APPL 42: 1135-1141 (2001)
IF: 0.383

Horváth R, On the Qualitative Properties of the Energy Function and the Finitely Summable in Time Property in the Numerical Solution of the Heat Equation, conference talk, Conference on Numerical Methods and Computational Mechanics, Miskolc, Hungary (1998)

A7. Horváth R, *On the Monotonicity Conservation in Numerical Solutions of the Heat Equation* APPL NUMER MATH 42: 189-199 (2002)
IF: 0.504

Horváth R, On the Monotonicity Conservation in Numerical Solutions of the Heat Equation, Technische Universiteit Eindhoven, RANA-report 00-15 (2000)
`http://www.win.tue.nl/casa/research/casareports/2000.html`

[1]The papers written with blue letters need some more editing. The papers are listed in chronological order.

Horváth R, On the Monotonicity Conservation in Numerical Solutions of the Heat Equation, conference talk, NUMDIFF-9 Conference, Halle an der Saale, Germany (2000)

A8. Faragó I, Horváth R, Korotov S, *Discrete Maximum Principle for Linear Parabolic Problems Solved on Hybrid Meshes* APPL NUMER MATH 53: 249-264 (2005)
IF: 0.589

Faragó I, Horváth R, Korotov S, Discrete Maximum Principle for Linear Parabolic Problems Solved on Hybrid Meshes, conference talk, NUMDIFF-10, Halle an der Saale, Germany (2003)

A9. Faragó I, Horváth R, Schilders W H A, *Investigation of Numerical Time-Integrations of Maxwell's Equations Using the Staggered Grid Spatial Discretization* INT J NUMER MODEL ELECTRON NETWORK DEV 18: 149-169 (2005)
IF: 0.32

Horváth R, Faragó I, Schilders W H A, Investigation of Numerical Time-Integrations of the Maxwell Equations Using the Staggered Grid Spatial Discretization, Technische Universiteit Eindhoven, RANA-report 02-15 (2002) `http://www.win.tue.nl/casa/research/casareports/2002.html`

A10. Horváth R, *On the Maximum-Minimum Principle for Advection-Diffusion Equations* PROBLEMS IN PROGRAMMING 2-3: 664-668 (2006)

Horváth R, On the Numerical Qualitative Properties of Parabolic Problems, conference talk, UKR-PROG 2006, Kiev, Ukraine (2006)

A11. Faragó I, Horváth R, *A Review of Reliable Numerical Methods for Three-Dimensional Parabolic Problems* INT J NUMER METH ENG 70: 25-45 (2007)
IF: 1.497

A12. Faragó I, Horváth R, *On the Connections Between the Qualitative Properties of the Numerical Solutions of Linear Parabolic Problems* SIAM J SCI COMPUT 28: 2316-2336 (2006)
IF: 1.824

A13. Horváth R, *Sufficient Conditions of the Discrete Maximum-Minimum Principle for Parabolic Problems on Rectangular Meshes* COMPUT MATH APPL 55(10): 2306–2317 (2008)
DOI: 10.1016/j.camwa.2007.11.005
IF: 0.997

A14. Horváth R, *On the Sign-Stability of Numerical Solutions of One-Dimensional Parabolic Problems* APPL MATH MODEL 32(8): 1570-1578 (2008)
DOI: 10.1016/j.apm.2007.04.016
IF: 0.931

A15. Botchev M, Faragó I, Horváth R, *Application of the Operator Splitting to the Maxwell Equations with the Source Term* APPL NUMER MATH 59: 522–541 (2009)
DOI: 10.1016/j.apnum.2008.03.031
IF: 1.279

Botchev M A, Faragó I, Horváth R, Application of the operator splitting to the Maxwell equations with the source term. Memorandum 1818, Department of Applied Mathematics, University of Twente, Enschede, the Netherlands, ISSN 0169-2690 (2007) `http://eprints.eemcs.utwente.nl/9206/`

A16. Faragó I, Horváth R, Qualitative Properties of Monotone Linear Operators ELECTRON J QUALITATIVE THEORY OF DIFFERENTIAL EQUATIONS 8: 1–15 (2008)
`http://www.math.u-szeged.hu/ejqtde/8/808.pdf`

A17. Faragó I, Horváth R, *Continuous and Discrete Parabolic Operators and their Qualitative Properties* IMA J NUMER ANAL 29: 606 – 631. (2009)
DOI: 10.1093/imanum/drn032
IF: 1.824

A18. Horváth R, *New Unconditionally Stable Numerical Schemes for Maxwell's Equations* COMPUT SCI ENG 3(4): 271–276 (2007)
IF: 0.714

A19. Faragó I, Horváth R, Korotov S, *Discrete Maximum Principles for Parabolic Problems with General Boundary Conditions* J APPL MATH 2(2): 49–56 (2009).
IF:

Faragó I, Horváth R, Korotov S, *Discrete Maximum Principles for Parabolic Problems with General Boundary Conditions* Proc. Conf. APLIMAT 2009, Faculty of Mechanical Engineering, Slovak University of Technology in Bratislava.

A20. Faragó I, Horváth R, Korotov S, *Discrete Maximum Principles for FE Solutions of Nonstationary Diffusion-Reaction Problems with Mixed Boundary Conditions* NUMER METH PART D E 27 (3): 702–720 (2011), DOI: 10.1002/num.20547
IF: 1.404

Faragó I, Horváth R, Korotov S, *Discrete Maximum Principles for FE Solutions of Nonstationary Diffusion-Reaction Problems with Mixed Boundary Conditions*, Helsinki University of Technology Institute of Mathematics Research Reports A, A550 (ISBN 978-951-22-9510-4)

A21 Havasi Á, Faragó I, Horváth R, *On the order of operator splitting methods for time-dependent linear systems of differential equations* INT J NUMER ANAL MOD B (2) 142–154 (2011). IF: 0.624

A22 Havasi Á, Faragó I, Horváth R, *Numerical Solution of the Maxwell Equations in Time-Varying Media Using Magnus Expansion*, CENT EUR J MATH (10) 137–149 (2012), DOI: 10.2478/s11533-011-0074-3. IF: 0.44

A23 Havasi Á, Horváth R, Szabó T. *Comparison of Some Parameter Estimation Techniques Applied to Proton Exchange Membrane Fuel Cell Models*, J. FUEL CELL SCI TECHNOL 10(5) 051001 (2013), DOI: doi:10.1115/1.4025044.
IF: 0.99

A24 Bátkai A., Havasi Á, Horváth R., Kunszenti-Kovács D., Simon P.L. *PDE approximation of large systems of differential equations*, OPERATORS AND MATRICES 9:(1) pp. 147-163. (2015)
arXiv preprint arXiv:1303.6235 (2013)
IF: 0.583 (2014)

A25 Faragó I, Horváth R., *On some qualitatively adequate discrete space-time models of epidemic propagation*, J COMP APPL MATH 293 45–54 (2016).
DOI: 10.1016/j.cam.2015.03.030

A26 Svantnerné Sebestyén G., Faragó I, Horváth R., Kersner R., Klincsik M., *Stability of patterns and of constant steady states for a cross-diffusion system*, J COMP APPL MATH 293 208–216 (2016).
DOI: doi:10.1016/j.cam.2015.03.041

A27 Faragó I., Horváth R., Karátson J., Korotov S., *Qualitative properties of nonlinear parabolic operators*, J MATH ANAL APPL, ...

## B – Chapters in books, referred proceedings

B1 Faragó I, Horváth R, *On the Nonnegativity Conservation of Finite Element Solutions of Parabolic Problems* Proc. Conf. Finite Element Methods: Three-Dimensional Problems eds. P. Neittaanmäki, M. Krizek GAKUTO Internat. Series Math. Sci. Appl., vol. 15, Gakkotosho, Tokyo, 2001, 76-84. (2001)

Faragó I, Horváth R, On the Nonnegativity Conservation of Finite Element Solutions of Parabolic Problems, conference talk, Conference on 3D Finite Element Methods, Jyväskylä, Finland (2000)

B2 Horváth R, *Uniform Treatment of the Numerical Time-Integration of the Maxwell Equations* Lecture Notes in Computational Science and Engineering Proceedings Scientific Computing in Electrical Engineering (SCEE-2002, June 23-28, 2002, Eindhoven, The Netherlands) 231-239 (2003)

Horváth R, Uniform Treatment of the Numerical Time-Integration of the Maxwell Equations, conference talk, Scientific Computing in Electrical Engineering Conference, Eindhoven, the Netherlands (2002)

B3 Faragó I, Horváth R, Korotov S, *Discrete Maximum Principle for Galerkin Finite Element Solutions to Parabolic Problems on Rectangular Meshes* Proceedings ENUMATH 2003, Numerical Mathematics and Advanced Applications, Prague (Czech Republic) Eds. M. Feistauer, V. Dolejsi, P. Knobloch, K. Najzar 298-307 (2003)

Faragó I, Horváth R, Korotov S, Discrete Maximum Principle for Galerkin Finite Element Solutions to Parabolic Problems on Rectangular Meshes, conference talk, ENUMATH 2003, Prague, Czech Republic (2003)

B4 Horváth R, Faragó I, Schilders W H A, *Iterative Solution Methods of the Maxwell Equations Using Staggered Grid Spatial Discretization* Proceedings of the Conference Finite Element Methods: Fifty Years of Conjugate Gradients Jyväskylä (Finland) 2002 Springer Verlag Berlin 211-220 (2004)

B5 Horváth R, *Operator Splittings for the Numerical Solution of Maxwell's Equations* LECT NOTES COMPUT SC 3743: 363 - 371 (2006)

Horváth R, Operator Splittings for the Numerical Solution of Maxwell's Equations, conference talk, Large-Scale Scientific Computations, Sozopol, Bulgaria (2005)

B6 Horváth R, *On the Sign-Stability of the Finite Difference Solutions of One-Dimensional Parabolic Problems* LECT NOTES COMPUT SC 4310: 458-465 (2007)

B7 Faragó I, Horváth R, *Discrete Maximum Principle for Finite Difference Solutions of the Heat Equation* In: I. Faragó, P. Vabisevich, L. Vulkov eds; Finite Difference Methods: Theory and Application, Rousse University Angel Kanchev 197–202 (2007)

Faragó I, Horváth R, Preservation of the Numerical Qualitative Properties of the Heat Equation with Linear Source Term, conference talk, Fourth Conference on Finite Difference Methods: Theory and Applications, Lozenetz, Bulgaria (2006)

B8 Faragó I, Horváth R, *Qualitative Analysis of Discrete Mesh Operators* In: I. Faragó, P. Vabisevich, L. Vulkov eds; Finite Difference Methods: Theory and Application, Rousse University Angel Kanchev 39–46 (2007)

B9 Horváth R, *On the Sign-Stability of Finite Difference Solutions of Semilinear Parabolic Problems* LECT NOTES COMPUT SC 5434: 305-313 (2009).
DOI: 10.1007/978-3-642-00464-3

B10 Havasi Á, Horváth R, Nemes Á, Szabó T, *Investigation of a Proton Exchange Membrane Fuel Cell Model by Parameter Fitting* Proceedings of Fifth Conference on Finite Difference Methods: Theory and Applications (FDM'10), Lozenetz, Bulgaria, 2010. június 28.

B11 Faragó I, Horváth R, *On a spatial epidemic propagation model* Proceedings of ECMI 2014

# C – Other publications

## Lecture notes

- Csanády V, Horváth R, Szalay L, *Matematikai statisztika* Egyetemi jegyzet, NYME (1995) (in Hungarian, Mathematical Statistics, University of West-Hungary, Sopron, Hungary)
- Horváth R, Szalay L, *Statisztika példatár* Egyetemi jegyzet, NYME (2002) (in Hungarian, Problems in Statistics, University of West-Hungary, Sopron, Hungary)
- Horváth R, Szalay L, *Matematika I* Egyetemi jegyzet, NYME KTK (2007) (in Hungarian, Mathematics for BSc students, part I, University of West-Hungary, Sopron, Hungary)
- Horváth R, Szalay L, *Matematika II* Egyetemi jegyzet, NYME KTK (2008) (in Hungarian, Mathematics for BSc students, part II, University of West-Hungary, Sopron, Hungary)
- Faragó I, Horváth R, *Numerikus módszerek* Egyetemi jegyzet, BME (2013) (in Hungarian, Numerical methods, BME)
- Faragó I, Fekete I, Horváth R, *Numerikus módszerek példatár* Egyetemi jegyzet, BME (2013) (in Hungarian, Numerical methods problem book, BME)

- Horváth R, Izsák F, Karátson J, *Parciális differenciálegyenletek numerikus módszerei számítógépes alkalmazásokkal*, Egyetemi jegyzet, ELTE (2013) (in Hungarian, Numerical methods of partial differential equations, ELTE)

## PhD dissertation

- Horváth R, *Qualitative Properties of Numerical Solutions of the Heat Conduction Equation*, Eötvös Loránd University Budapest, phd dissertation (2000)

## Habilitation dissertation

- Horváth R, *Time Integration Methods of the Maxwell Equations on Staggered Spatial Grids*, Eötvös Loránd University Budapest, Faculty of Natural Sciences, Mathematics, habilitation dissertation (2008)

## Scientific reports

- Faragó I, Horváth R, *Qualitative Linear Algebra and its Application to the Numerical Solution of the Heat Equation* Publications on Applied Analysis 1999/1, Eötvös Loránd University, Department of Applied Analysis (1999)

  Faragó I, Horváth R, Qualitative Linear Algebra and its Application to the Numerical Solution of the Heat Equation, poster, Conference in Honor of Robert J. Plemmons, Winston-Salem, USA (1999). Preface of the special issue of LAA: `http://titanic.nyme.hu/~rhorvath/plemmons.pdf`

- Horváth R, *A Review and Comment of the Recent FDTD Literature from the Point of View of the Numerical Solution Fastness* Technische Universiteit Eindhoven, RANA-report 01-23 (2001) `http://www.win.tue.nl/casa/research/casareports/2002.html`

- Faragó I, Horváth R, *Discrete Mesh Operators and Their Qualitative Properties*, Tuebingen Univesitat, Tuebinger Berichte zur Funktionalanalysis 15 145-154 (2006)

## Unpublished scientific reports

- Horváth R, Szalay L, *Statisztikai megfontolások a tesztüzemhálózatok kialakításánál és az eredmények kiértékelésénél*, NYME, Matematikai Intézet, 1998 (in Hungarian, Some Statistical Considerations in the Construction of Test Factory Networks and in the Evaluation of the Results, Institute of Mathematics, University of West-Hungary, Sopron, Hungary)

## Scientific presentations

- Horváth R, *An optimal parameter choice for the $(\sigma, \theta)$-method*, conference talk, Second Joint Conference on Mathematics and Computer Science, Illyefalva, Rumania (1997)

- Horváth R, *On the Time-Integration of Maxwell Equations Using the Yee Discretization in Space*, conference talk, 3rd Mini-Symposium, Numerical Mathematics Group of Utrecht University, Utrecht, the Netherlands (2001)

- Horváth R, *Time-Integration Schemes in the Numerical Solutions of the Maxwell Equations*, conference talk, CODESTAR Kick-Off Meeting, Eindhoven, the Netherlands (2002)

- Horváth R, *Finite-Difference Time-Domain Method - Time Integration Schemes*, introductory talk, Finite-Difference Time-Domain Method Meeting, Philips Research Eindhoven, Eindhoven, the Netherlands (2002)

- Horváth R, *A Maxwell-egyenletek numerikus megoldási módszerei*, Alkalmazott matematika és mechanika konferencia, NYME EMK Matematikai Intézet, Sopron, Magyarország (2003) (in Hungarian, Numerical Methods for the Maxwell equations, Conference of Applied Mathematics and Mechanics, Institute of Mathematics, University of West-Hungary, Sopron, Hungary)

- Horváth R, *Time Discretizations for Staggered Grid Approaches*, ECMI 2004, conference talk, Eindhoven, the Netherlands (2004)

- Horváth R, *A hővezetési egyenlet numerikus megoldásának előjelstabilitása*, III. Regionális Természettudományi Konferencia, Szombathely, Magyarország (2008) (in Hungarian, On the Sign-Stability of the Numerical Solutions of the Heat Conduction Equation, 3rd Regional Conference on Natural Sciences, Szombathely, Hungary)

- Horváth R., *Application of the Operator Splitting Technique in the Staggered Grid Finite Difference Solution of the Maxwell Equations*, Seminar on numerical analysis and computational science, University of Technology Helsinki, Institute of Mathematics, Helsinki, Finland (2008)

- Horváth R., *Application of the Operator Splitting Technique in the Staggered Grid Finite Difference Solution of the Maxwell Equations*, conference talk, Encounters between discrete and continuous mathematics, Blaubeuren, Germany (2008)

- Faragó I., Havasi Á., Horváth R., *Operator Splitting Methods for Non-Autonomous Systems and its Application to the Numerical Solution of the Maxwell Equations in Time-Varying Media*, conference talk, Innovative integrators Workshop, Austria (Innsbruck, 2010).

- Faragó I., Havasi Á., Horváth R., *Numerical Solution of the Maxwell Equations in Time-Varying Media Using Magnus Expansion*, conference talk, Conference on Simulation and Optimization, Hungary (Győr, 2011).

- Havasi Á., Horváth R., Szabó T., *Investigation of a Proton Exchange Membrane Fuel Cell Model by Parameter Fitting with Different Parameter Estimation Techniques*, Basque-Hungarian Workshop on Numerical Methods for Large Systems, Basque Center for Applied Mathematics (BCAM), Bilbao, Spain, April 2012.

- Faragó I., Horváth R., *On a Spatial Epidemic Propagation Model*, The Third BCAM Workshop in Computational Mathematics, Basque Center for Applied Mathematics (BCAM), Bilbao, Spain, July 2014.

## Presentations to popularize Mathematics

- Horváth R, Németh L, Szalay L, *A rekurzió*, előadás, Rátz László Vándorgyűlés, Sopron (1996) (in Hungarian, On the Recursion, László Rátz Conference, Sopron, Hungary)

- Horváth R, Németh L, Szalay L, *Egyenletek megoldása számítógéppel*, előadás, Rátz László Vándorgyűlés, Szombathely (1999) (in Hungarian, On the Solutions of Equations Using Computers, László Rátz Conference, Szombathely, Hungary)

# CITATIONS


1. Akimenko, V.V., Mitrokhin, S.A., The model of nonlinear filtration optimal control for the problem of areas underflooding, Journal of Automation and Information Sciences 42 (8) , pp. 65-82 (2010).

   A13

2. Bartels, S, Roubicek T, *Thermoviscoplasticity at small strains* ZAMM ZEITÍSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND MECHANIK 88 (9), 735–754 (2008)

   A8

3. Bátkai A, Sikolya E, The norm convergence of a Magnus expansion method, CENTRAL EUROPEAN JOURNAL OF MATHEMATICS 10 (1) 150–158, DOI: 10.2478/s11533-011-0101-4

   A22

4. Berzins M, *Modified Mass Matrices and Positivity Preservation for Hyperbolic and Parabolic PDE's* COMMUN NUM METH ENG 17: 659-666 (2001)

   B1

5. Botchev M A, Harutyunyan D, van der Vegt J J W, *The Gautschi Time Stepping Scheme for Edge Finite Element Discretizations of the Maxwell Equations* J COMPUT PHYS 216: 654-686 (2006)

   A9, B2

6. Borisov V S, Sorek S, *On Monotonicity of Difference Schemes for Computational Physics* SIAM J SCI COMPUT 25: 1557-1584 (2004)

   A7

7. Borisov V S, Mond M, *On Monotonicity, Stability, and Construction of Central Schemes for Hyperbolic Conservation Laws with Source Terms*, arXiv:0705.1109v2 [physics.comp-ph] (2007)

   A7

8. Borovykh N, Drissi D, Spijker M N, *A Bound on Powers of Linear Operators, with Relevance to Numerical Stability* APPL MATH LETT 15: 47-53 (2002)

   A2

9. Brandts J, Korotov S. Krizek M, *Survey of Discrete Maximum Principles for Linear Elliptic and Parabolic Problems*, in: P. Neitaanmaaki et al eds; Proceedings of the ECCOMAS 2004 Congress, Finland 2004

   A4, B1, B3

10. Brandts J, Korotov S, Krizek M, Solc J, *On Nonobtuse Simplicial Partitions* SIAM Rev 51 (2), 317–335 (2009)

    A12

11. Chernogorova, T., Valkov, R., A two-level second-order finite difference scheme for the single term structure equation, AIP Conference Proceedings 1410, pp. 139–146 (2011).

    A17

12. Chernogorova, T., Vulkov, L., A finite volume difference scheme for a model of settling particle dispersion from an elevated source in an open-channel flow, Computers & Mathematics with Applications volume 67, issue 12, pp. 2099 - 2111 (2014).

    A12

13. Dakua, S.P., Sahambi, J.S., Detection of left ventricular myocardial contours from ischemic cardiac MR images, IETE Journal of Research 57 (4), pp. 372-384 (2011).

    A6

14. Davydov O, *Discrete Maximum Principles in Finite Element Analysis* University of Jyväskylä (2003) (MSc thesis)

B1

15. Elshebli M, *Maximum Principle and Non-Negativity Preservation in Linear Parabolic Problems* ANN UNIV SCI BP R EÖTVÖS NOM SECT COMPUT 48: 99-108 (2005)

A2, A8, B1, B3

16. Elshebli M, *Discrete Maximum Principle for Bilinear Finite Elements on Uniform Square Mesh* SCI BUL PETRU MAIOR UNIV 18: 149-160 (2005)

A8, B3

17. Elshebli M, *Preservation of the Qualitative Properties in the Vertical Advection-Diffusion DEM Sub-Model of the Air-Pollution Process* PROBLEMS IN PROGRAMMING 7: 643-653 (2006)

A8

18. Elshebli M, *Discrete Maximum Principle for the Finite Element Solution of Linear Non-Stationary Diffusion-Reaction Problems*,
DOI: 10.1016/j.apm.2007.03.014 (2007)

A12, A13, B3

19. Faragó I, Kovács M, *On Maximum Norm Contractivity of Second Order Damped Single Step Methods* CALCOLO 40: 91-108 (2003)

A2

20. Faragó I, *Application of the Operator Splitting Method for Real-Life Problems* IDŐJÁRÁS QUART J HMS 110: 379-395 (2006)

B4

21. Faragó I, *A Modified Iterated Operator Splitting Method* APPL MATH MOD 32(8): 1542–1551 DOI: 10.1016/j.apm.2007.04.018 (2007)

B5

22. Faragó, I., Karátson, J., Korotov, S., Discrete maximum principles for the FEM solution of some nonlinear parabolic problems, Electronic Transactions on Numerical Analysis 36 , pp. 149–167 (2009).

A13, A17

23. Faragó, I., New operator splitting methods and their analysis, Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) 4310 LNCS , pp. 443-450 (2007).

B5

24. Farkas H, Faragó I, Simon P, *Qualitative Properties of Conductive Heat Transfer* In: Sienuitycz S, De Vos A (Eds.) Thermodynamics of Energy Conversion and Transport, Springer-Verlag 199-239 (2000)

A2

25. Georgiev, K., Mincsovics, M., Qualitatively correct discretizations in an air pollution model, Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) 4818 LNCS , pp. 201-208 (2008).

A8, A11

26. Ramunas Girdziusas, Dissertations in Computer and Information Science, Helsinki University of Technology, Espoo, Report D25 (2008)

PhD dissertation

27. Hannukainen A, Korotov S, Vejchodský T, *Discrete maximum principle for FE solutions of the diffusion-reaction problem on prismatic meshes* J COMP APPL MATH 226(2): 275 - 287 (2009)

A12, A14, A17

28. Harari I, Hauke G, *Semidiscrete Formulations for Transient Transport at Small Time Steps* INT J NUMER METH FL 54 (6-8): 731-743 (2007) DOI: 10.1002/fld.1487

A8

29. Horváth Z, *On the Positivity Step Size Threshold of Runge-Kutta Methods* APPL NUMER MATH 53: 341-356 (2005)

A8

30. Huang, Z.X., Wu, X.L., Sha, W.E.I., Wu, B., Optimized operator-splitting methods in numerical integration of Maxwell's equations, International Journal of Antennas and Propagation 2012, art. no. 956431 (2012).

A15

31. Hochbruck, M., Ostermann, A., Exponential integrators, Acta Numerica 19 , pp. 209-286 (2010).

A15

32. Horváth, Tamás L., Mincsovics, Miklós E., Discrete maximum principle for interior penalty discontinuous Galerkin methods, Central European Journal of Mathematics April 2013, Volume 11, Issue 4, pp. 664-679.

A11

33. Jian, Z., Hangzhou, Yunqin, L., Jianping, F., Numerical analysis of corporate claims, 2nd International Conference on Information Science and Engineering, ICISE2010 - Proceedings, art. no. 5692000, pp. 5935–5939 (2010)

A2

34. Karátson J, Korotov S, *Discrete Maximum Principles in Finite Element Solutions of Nonlinear Problems with Mixed Boundary Conditions* NUMER MATH 99: 669-698 (2005)

A8, B1

35. Mac Kinnon R J, Carrey G F, *Positivity-Preserving, Flux-Limited Finite Difference and Finite Element Methods for Reactive Transport* INT J NUMER METH FL 41: 151-183 (2003)

B1

36. Koleva, M.N., Vulkov, L.G., A numerical study of a parabolic Monge-Ampere equation in mathematical finance, Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) 6046 LNCS , pp. 461-468 (2011).

A14

37. Korotov S, Krizek M, *Global and Local Refinement Techniques Yielding Nonobtuse Tetrahedral Partitions* COMP MATH APPL 50: 1105-1113 (2005)

B1

38. Korotov, S., Krízek, M., Solc, J., On a discrete maximum principle for linear FE solutions of elliptic problems with a nondiagonal coefficient matrix, Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) 5434 LNCS , pp. 384-391 (2009).

A13

39. Kuzmin D, *On the Design of Higher-Order FEM Satisfying the Discrete Maximum Principle* ERGEBNISBERICHTE DES INSTITUTS FÜR ANGEWANDTE MATHEMATIK 341: 1-12 (2007)

A8

40. Kuzmin D, *On the design of algebraic flux correction schemes for quadratic finite elements* J COMPUT APPL MATH 218 (1), 79–87 (2008)

A8

41. Kuzmin D, *Explicit and implicit FEM-FCT algorithms with flux linearization* J COMP PHYS 228(7): 2517 – 2534 (2009)

A8

42. Kuzmin D, Shashkov MJ, Svyatskiy D, *A constrained finite element method satisfying the discrete maximum principle for anisotropic diffusion problems* J COMP PHYS 228(9): 3448 – 3463 (2009)

A8

43. Kuzmin, D., *Linearity-preserving flux correction and convergence acceleration for constrained Galerkin schemes*, Journal of Computational and Applied Mathematics 236 (9): 2317 - 2337 (2012)

A17

44. Mincsovics M E, *Discrete and continuous maximum principles for parabolic and elliptic operators* J COMP APPL MATH 235 (2) 470–477 (2010)

A12, A17

45. Mincsovics M E, *Discrete maximum principle for finite element parabolic operators* LNCS (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) 5910 604–612 (2010)

A8, A12, A17

46. Quint, K.J., Hartmann, S., Rothe, S., Saba, N., Steinhoff, K., Experimental validation of high-order time integration for non-linear heat transfer problems, Computational Mechanics 48 (1), pp. 81-96 (2011).

A11

47. De Raedt H, Kole J S, Michielsen K F L, Figge M T, *Unified Framework for Numerical Methods to Solve the Time-Dependent Maxwell Equations* COMPUT PHYS COMMUN 156: 43-61 (2003)

A9

48. Sha W, Wu X L, Huang Z X, Chen M S, *Maxwell's Equations, Symplectic Matrix and Grid* PROGRESS IN ELECTROMAGNETICS RESEARCH B 8: 115-127 (2008)

A9

49. Stando J, *Issues of the Finite Element Method in the Context of Automatic Triangulation and Numerical Integration* University of Lodz, PhD dissertation 2004 (in Polish)

A8

50. Szabó T, *Some sufficient conditions for the non-negativity preservation property in the discrete heat conduction model* J COMPUT APPL MATH 235 (2) 478–490 (2010)

A11, A12

51. Tutberidze, M., On the numerical integration of one nonlinear parabolic equation, International Journal of Pure and Applied Mathematics 66 (2), pp. 209-220 (2011).

B9

52. Vejchodsky T, *On the Nonnegativity Conservation in Semidiscrete Parabolic Problems* In: Conjugate Gradient Algorithms and Finite Element Methods, Berlin, Springer-Verlag 197-210 (2004)

A8, B1

53. Vejchodsky T, *Method of Lines and Conservation of Nonegativity* In: Proc. of the European Congress on Computational Methods in Applied Sciences and Engineering 1-18 (2004)

A8, B1

54. Vejchodsky T, *Finite element approximation of a nonlinear parabolic heat conduction problem and a posteriori error estimators*, PhD thesis, Charles University, Prague (2003)

B1

55. Vejchodsky T, *Higher–order discrete maximum principle for 1D diffusion–reaction problems*, APPLIED NUMERICAL MATHEMATICS 60 (4) 486–500 (2010)

A8

56. Vejchodský, T, Korotov S, Hannukainen A, *Discrete maximum principle for parabolic problems solved by prismatic finite elements* MATHEMATICS AND COMPUTERS IN SIMULATION 80 (8) 1758–1770 (2010)

A8, A11, A12

57. Vejchodský, T., The discrete maximum principle for Galerkin solutions of elliptic problems, Central European Journal of Mathematics 10 (1), pp. 25-43 (2012).

A8, A11, A12

58. Verwer J G, Botchev M A, *Unconditionally stable integration of Maxwell's equations*, LINEAR ALGEBRA AND ITS APPLICATIONS 431 (3–4), 300–317 (2009). (Special Issue in honor of Henk van der Vorst)

A9

59. Xiao F, Tang X, Wang L, Wu T, *Time-domain methods based on exponential evolution operator approximation for the solution of Maxwell's equations* APMC 2009 - Asia Pacific Microwave Conference 2009, art. no. 5385492 68–71 (2009)

A9

60. Alejandro Cosimo, Alberto Cardona, *PROBLEMAS DE CHOQUE TÉRMICO EN EL MÉTODO DE LOS ELEMENTOS FINITOS*, Mecánica Computacional Vol XXXI, págs. 1937-1950 (artículo completo) Alberto Cardona, Paul H. Kohan, Ricardo D. Quinteros, Mario A. Storti (Eds.) Salta, Argentina, 13-16 Noviembre 2012.

A17

61. Lipnikov, K., Svyatskiy, D., Vassilevski, Yu., Minimal stencil finite volume scheme with the discrete maximum principle, Russian Journal of Numerical Analysis and Mathematical Modelling 27 (4), pp. 369-385 (2012).

A20

62. Faragó, I., Karátson, J., Korotov, S., Discrete maximum principles for nonlinear parabolic PDE systems, IMA Journal of Numerical Analysis 32 (4), pp. 1541-1573 (2012).

A20

63. Liang, D., Yuan, Q., *The spatial fourth-order energy-conserved S-FDTD scheme for Maxwell's equations*, Journal of Computational Physics volume 243, year 2013, pp. 344 - 364.

A15

64. Lipnikov, K., Svyatskiy, D., Vassilevski, Y., Anderson acceleration for nonlinear finite volume scheme for advection-diffusion problems, SIAM Journal on Scientific Computing 35 (2), pp. A1120-A1136 (2013).

A20

65. Lu, C., Huang, W., Van Vleck, E.S., The cutoff method for the numerical computation of nonnegative solutions of parabolic PDEs with application to anisotropic diffusion and Lubrication-type equations, Journal of Computational Physics 242, pp. 24-36 (2013).

A8, A12, A20

66. Alejandro C. Limache, Pablo S. Rojas y Marina H. Murillo, LA VIOLACIÓN DE LA SEGUNDA LEY DE LA TERMODINÁMICA POR EL MÉTODO DE ELEMENTOS FINITOS, Asociación Argentina de Mecánica Computacional, Mecánica Computacional Vol XXXII, págs. 1199-1212 (artículo completo) Carlos G. García Garino, Aníbal E. Mirasso, Mario A. Storti, Miguel E. Tornello (Eds.) Mendoza, Argentina, 19-22 Noviembre 2013.

A17

67. Li, X., Huang, W., Maximum principle for the finite element solution of time-dependent anisotropic diffusion problems, Numerical Methods for Partial Differential Equations 29 (6) , pp. 1963-1985 (2013).

A8, A11, A12, A17

68. Kolev, M.K., Koleva, M.N., Vulkov, L.G., Two positivity preserving flux limited, second-order numerical methods for a haptotaxis model, Numerical Methods for Partial Differential Equations 29 (4) , pp. 1121-1148 (2013).

A12

69. Cavalli, F., Linearly implicit approximations of diffusive relaxation systems, Acta Applicandae Mathematicae 125 (1) , pp. 79-103 (2013).

A12

70. Zeng, F., Ma, H., Liang, D., Energy-conserved splitting spectral methods for two dimensional Maxwell's equations, Dedicated to Professor Ben-yu Guo on the occasion of his 70th birthday, Journal of Computational and Applied Mathematics volume 265, pp. 301 - 321. (2014).

A15

71. Zhang, Y., Zhang, X., Shu, C.-W., Maximum-principle-satisfying second order discontinuous galerkin schemes for convection-diffusion equations on triangular meshes, Journal of Computational Physics 234 (1) , pp. 295-316 (2013).

A12

72. Ervin, V.J., Macías-Díaz, J.E., Ruiz-Ramírez, J., A positive and bounded finite element approximation of the generalized Burgers-Huxley equation, Journal of Mathematical Analysis and Applications, volume 424, issue 2, pp. 1143 - 1160 (2015).

A12