

# **Dr. Zacharias A. ANASTASSI**

## **CURRICULUM VITAE**

**Updated: October 2018**

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## Personal Details & Qualifications

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### Personal Details

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United Kingdom (Office: GH 6.74).  
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### Education & Qualifications

#### Education

- Ph.D. in Numerical Analysis, University of Peloponnese, Tripolis, Greece. Thesis title: "*Numerical Solution of Differential Equations with the Use of Special Methods*" (Jan 2003 – Jun 2006).
- 5-year, 300-ECTS Diploma in Civil Engineering, Democritus University of Thrace, Xanthi, Greece. Thesis title: "*Numerical Solution of Ordinary Differential Equations with Oscillating Solution with the Use of Runge-Kutta Methods*" (Sep 1997 – Sep 2002).

#### Languages

- Greek (mother tongue)
- English (Certificate of Proficiency in English, Cambridge University)

#### Computer Knowledge

Maple, Matlab, Mathematica, Fortran, C, Visual Basic, Parallel Programming (MPI), Excel, Autograph, LaTeX, Word, MathType, Blackboard, MyMathLab, Acrobat, Power Point, Linux, Windows, touch typing.

## Research Interests

- Numerical analysis, Numerical solution of initial/boundary value problems, Development and analysis of numerical algorithms
  - Scientific computing, Computational methods for the solution of real problems in physics, material science, chemistry, engineering etc.
  - Development of software packages, Parallel algorithms
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## Professional Experience

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- 2018 Feb –* Senior Lecturer in Computational Mathematics, Games, Mathematics and Intelligent Systems, School of Computer Science and Informatics, Faculty of Technology, De Montfort University, Leicester, United Kingdom.
- 2012 – 2018 Jan.* Assistant Professor in Mathematics, Department of Mathematics, Statistics and Physics, College of Arts and Sciences, Qatar University, Doha, Qatar.
- 2010 – 2012* Visiting Assistant Professor in Mathematics, Department of Sciences, School of Pedagogical & Technological Education (ASPETE), Athens, Greece.
- 2009 – 2010* Visiting Assistant Professor in Mathematics, Department of Finance and Auditing, School of Management and Economics, Technological Educational Institute of Kalamata, Kalamata, Greece.
- 2006 – 2009* Visiting Lecturer in Mathematics, Department of Computer Science and Technology, Faculty of Sciences and Technology, University of Peloponnese, Tripoli, Greece.
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## Publication Record

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- Author of **37 research articles**, published in international refereed journals indexed in Thomson ISI Web of Science (see “Appendix: Publications”), including
- **1 review paper**: Z.A. Anastassi and T.E. Simos: *Numerical Multistep Methods for the Efficient Solution of Quantum Mechanics and Related Problems*, Physics Reports, vol. 482-483, pp. 1-240 (2009).
- Author of **34 abstracts**, published in refereed proceedings of international conferences, 18 of which are indexed in Thomson ISI Proceedings (see “Abstracts in Conference Proceedings”).

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## Research Grants & Funding

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- *Lead Principal Investigator*: NPRP9-329-1-067, “Split-ring resonator based nonlinear metamaterials: from few to many, theory and experiments”, funded by Qatar National Research Fund (Aug 2016 – Aug 2019, Budget: **\$763,000**. P.I. after Feb 2018, due to affiliation change).
- *Co-Lead Principal Investigator*: NPRP8-764-1-160, “Rogue Waves: From Oceans to Microwaves and Light”, funded by Qatar National Research Fund (Feb 2016 – Feb 2019, Budget: **\$810,000** P.I. after Feb 2018, due to affiliation change).
- *Lead Principal Investigator*: Internal Grant QUUG-CAS-DMSP-13/14-7, “Numerical Methods for the Solution of the Schrödinger Equation”, funded by Qatar University (Apr 2014 – Apr 2015, Budget: **\$41,000**).
- *Lead Principal Investigator*: Start-Up Grant, QUSG-CAS-MPS-12/13-25, funded by Qatar University (Apr 2013 – Apr 2014, Budget: **\$11,000**).
- *Research Associate*: Research Programme “Archimedes” funded by the General Department of Technological Institute of Chalkis, with subject “Optimized Runge-Kutta methods with minimal phase-lag and infinite phase-lag order and combination of infinite phase-lag order and infinite anticipation factor order” (Apr 2004 – Apr 2006).
- *Research Associate*: Research Programme “Pythagoras II” funded by the Department of Applied Mathematics and Science of the National Technological Institute of Athens, with subject “Construction of special numerical methods for the integration of ordinary differential equations with oscillatory solution” (Jan 2005 – Dec 2006).

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## Organization of Conferences and Symposia

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### Vice-Chairman of International Conferences

- Vice-Chairman of “International Conference of Numerical Analysis and Applied Mathematics” - ICNAAM 2011, 2012

### Member of the Organizing Committee of International Conferences

- Member of the Organizing Committee of the annual Conference entitled “International Conference of Numerical Analysis and Applied Mathematics (ICNAAM)” (2004, 2005, 2006, 2007, 2008, 2009, and 2010)

- Member of the Organizing Committee of the annual Conference entitled “*International Conference of Computational Methods in Sciences and Engineering (ICCMSE)*” (2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, and 2011)
- Member of the Organizing Committee of the annual Conference entitled “*International electronic Conference on Computer Science*” - IeCCS (2005, 2006, 2007, and 2008)
- Member of the Organizing Committee of the Conference entitled “*International Conference on Tourism Development and Management*” - ICTDM 2009
- Member of the Organizing Committee of the Conference entitled “*International Conference on Management and Marketing Sciences*” - ICMMS 2008

### **Organization of Symposia in International Conferences**

Organizer of the Symposium entitled “*Symposium on the Numerical Solution of Differential Equations and their Applications*” during the “International Conference of Numerical Analysis and Applied Mathematics” (ICNAAM) for the years 2008, 2009, 2010, 2011 and 2012.

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### **Co-Editorship of International Conference Proceedings**

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- T.E. Simos, G. Psihoyios, C. Tsitouras, Z.A. Anastassi, Preface: Proceedings of the International Conference on Numerical Analysis and Applied Mathematics 2012 (ICNAAM-2012) <http://dx.doi.org/10.1063/1.4756047> (2450 pages).
- T.E. Simos, G. Psihoyios, C. Tsitouras, Z.A. Anastassi, Preface: Proceedings of the International Conference on Numerical Analysis and Applied Mathematics 2011 (ICNAAM-2011), AIP Proceedings, 1389 <http://dx.doi.org/10.1063/1.3636658> (2060 pages).

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### **Programme Committees of International Conferences**

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#### **Member of the Programme Committee of International Conferences**

- Member of the Programme Committee of the annual conference “Computer Aspects of Numerical Algorithms” - CANA (2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018).
- Member of the Programme Committee of the conference “International Conference of Numerical Analysis and Applied Mathematics” - ICNAAM (2011, 2012).

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## **Editorials of Special Issues of Journals**

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- T.E. Simos, A.D. Zdetsis, G. Psihoyios, Z.A. Anastassi, Special Issue on Mathematical Chemistry based on papers presented within ICCMSE 2005 Preface, Journal of Mathematical Chemistry, 46, 3, 727-728 (2009).
  - T.E. Simos, G. Psihoyios, Z.A. Anastassi, Proceedings of the International Conference of Computational Methods in Sciences and Engineering 2005 Preface, Mathematical and Computer Modelling, 51, 3-4, 137-137 (2010).
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## **Managerial Experience**

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### **Programme Leadership**

- Deputy Programme Leader, BSc Mathematics (Autumn 2018-)

### **Module Leadership**

- Linear Algebra I (2018 Autumn)
- Linear Algebra II (2019 Spring)
- Operational Research II (2019 Spring)
- Nonlinear Dynamical Systems (2019 Spring)
- Modelling Ordinary Differential Equations (2018 Autumn)
- Modelling Partially Differential Equations (2019 Spring)

### **Curriculum Design**

- Contributed to the design, redesign or review of modules and the curriculum, as a member of the Curriculum and Study Plans Committee, Qatar University.
- Contributed to the review of the reactivated B.Sc. curriculum in Actuarial and Applied Mathematics, Qatar University.

### **Coordinator of Courses with Multiple Sections**

- Calculus I (2015 Autumn)
- Business Mathematics (2013 Autumn, 2015 Spring)
- Calculus II (2014 Spring)

## Participation in Committees

- Scientific Research Committee (2012-2017)
- Academic Quality and Assessment (2016-2017)
- Portfolio Evaluation Committee (2017)
- Math Placement Test Committee (2017)
- Math Conference Preparation Committee (2017)
- Curriculum and Study Plans Committee (2015-2016)
- Math Learning Support Committee (2015-2016)
- Student Affairs Committee (2012-2015)

## Teaching Experience

Course	Technologies	Semesters
<b>Linear Algebra II (incl. Numerical Linear Algebra)</b>	Matlab (in-class examples), Excel (in-class worksheets and graphs)	2018 Spring, 2006 Autumn
<b>Numerical Analysis (3 sections)</b>	Matlab (in-class examples, assignments, projects), Maple/Mathematica (in-class shapes and animations, laboratory examples, projects), Excel (in-class worksheets and graphs), Word and Acrobat (prepared my own introductory notes on Maple)	2017 Autumn, 2012 Spring, 2011 Spring
<b>Mathematics for Statistics (9 sections)</b>	Mathematica (2D and 3D shapes and animations for presentation slides), Autograph (in-class 2D and 3D shapes and animations), Excel (in-class worksheets and graphs), LaTeX and Acrobat (prepared new presentation slides), Blackboard (assignments, projects, course material, announcements, grades)	2017 Spring, 2016 Spring, 2016 Autumn, 2015 Autumn (2 sections), 2014 Autumn, 2014 Spring, 2013 Autumn, 2012 Autumn
<b>Business Mathematics (7 sections)</b>	Excel (in-class worksheets and graphs), Autograph (in-class shapes and animations), LaTeX and Acrobat (prepared new presentation slides), Blackboard (assignments, projects, course material, announcements, grades)	2015 Spring, 2013 Autumn (2 sections), 2013 Spring (3 sections), 2012 Autumn

<b>Course</b>	<b>Technologies</b>	<b>Semesters</b>
<b>Calculus I</b> (12 sections)	MyMathLab (presentation slides, interactive figures, assignments, course material), Excel (in-class worksheets and graphs), Matlab (projects), Blackboard (course material, grades)	2017 Autumn, 2016 Autumn, 2015 Autumn, 2015 Spring, 2014 Autumn (2 sections), 2011 Autumn (2 sections), 2010 Autumn (2 sections), 2008 Autumn, 2007 Autumn
<b>Calculus II</b> (9 sections)	MyMathLab (presentation slides, interactive figures, assignments, course material), Excel (in-class worksheets and graphs), Matlab (projects), Blackboard (course material, grades)	2016 Spring (2 sections), 2014 Spring, 2012 Spring (2 sections), 2011 Spring (2 sections), 2009 Spring, 2008 Spring
<b>Applied Mathematics</b>	Matlab (in-class examples, assignments, projects), Maple (in-class shapes and animations), Excel (in-class worksheets and graphs)	2010 Autumn
<b>Linear Programming</b>	Matlab (in-class examples, assignments, projects), Excel (in-class worksheets and graphs)	2009 Spring
<b>Nonlinear Programming</b> (part of the course)	Matlab (in-class examples, assignments, projects), Maple (in-class shapes and animations), Excel (in-class worksheets and graphs)	2009 Spring
<b>Operational Research</b>	Matlab (in-class examples, assignments, projects), Excel (in-class worksheets and graphs)	2006 Autumn
<b>Parallel Algorithms</b> (2 sections)	C, MPI (Message Parsing Interface)	2008 Spring, 2007 Spring
<b>Calculus and Linear Algebra</b> (2 sections)	Excel (in-class worksheets and graphs)	2010 Spring, 2009 Autumn
<b>Statistics</b> (2 sections)	Excel (in-class worksheets and graphs)	2010 Spring, 2009 Autumn



<b>Course</b>	<b>Technologies</b>	<b>Semesters</b>
<b>Introduction to Computer Science and Technology</b> (part of the course)	Acrobat (presentation slides)	2006 Autumn
<b>Numerical Linear Algebra, Numerical Analysis, Operational Research</b> (secondary lecturer)	Matlab (in-class examples, assignments, projects), Maple (in-class shapes and animations), Excel (in-class worksheets and graphs), Word and Acrobat (prepared my own introductory notes on Matlab)	Academic years 2003, 2004, 2005

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## **Development**

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### **Training & Workshops**

1. Higher Education Academy Fellowship Workshop (DMU, 2018)
2. Motivating Students (Qatar University, 2017)
3. Creating Learner-Centric Educational Environments and Experiences (QU, 2017)
4. Approaches to Developing and Implementing Learner-Centred Pedagogy (QU, 2017)
5. Developing Effective Evaluations (QU, 2016)
6. Socratic Teaching (QU, 2016)
7. Improving Learning and Teaching with Technology in Classroom (DMSP: Dpt. Math. Stat. & Physics, 2014)
8. MyMathLab Workshop (DMSP, 2014)
9. Interactive Lectures (QU, 2014)
10. MyMathLab Workshop (DMSP, 2014)
11. Helping At-Risk Students Succeed (QU, 2014)
12. Question and Answer Sessions for MyMathLab (DMSP, 2013)
13. How to Make the Best Use of Visual Resources in the College Classroom, (QU, 2013)
14. MyMathLab Training, (DMSP, 2013)
15. Useful BB Features that Help Organize your Class: Groups & Adaptive Release (QU, 2012)

16. Follow Up on Assessment Week: Aligning PLOs Rubric and Evidence (QU, 2012)
17. Research Grant Writing - Development Series, (CAS: College of Arts & Sciences, 2012)
18. Blackboard – Grade Centre (DMSP, 2012)
19. Blackboard – Discussion Boards / Online Forums (QU, 2012)
20. Blackboard – Receiving Assignments and Providing Feedback to Students (QU, 2012)
21. Blackboard Training (DMSP, 2012)
22. Blackboard – Basic Level 1 (QU, 2012)

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## **Research Supervision**

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Two Post-Doctoral Fellows and two Research Associates (Ph.D. students), Qatar University, financed via three research projects:

- Vasilios Koukouloyannis, Post-Doctoral Fellow (NPRP9-329-1-067, Qatar University).
- Georgios Fotopoulos, Post-Doctoral Fellow (NPRP8-764-1-160, Qatar University).
- Konstantinos Vetas, Research Associate (NPRP8-764-1-160, Qatar University).
- Fotini Tsitoura, Research Associate (QUUG-CAS-DMSP-13/14-7, Qatar University).

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## **Reviewer Experience**

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### **Reviewer for International Journals**

1. Computer Physics Communications, Elsevier
2. Computers and Mathematics with Applications, Elsevier
3. International Journal of Modern Physics C, World Scientific
4. Mathematical Methods in the Applied Sciences, Wiley
5. Applied Mathematics and Computation, Elsevier
6. Hacettepe Journal of Mathematics and Statistics, Hacettepe University
7. Abstract and Applied Analysis, Hindawi
8. International Journal of Differential Equations, Hindawi

9. Discrete Dynamics in Nature and Society, Hindawi
10. Journal of Computational Methods in Sciences and Engineering, IOS Press
11. Computing Letters, Brill
12. Journal of Numerical Analysis, Industrial and Applied Mathematics

### **Reviewer for Special Issues of International Journals**

1. Communications in Mathematical and in Computer Chemistry (MATCH), 60, 3, A Special Section "*Numerical Methods in Chemistry*" edited by Theodore E. Simos and Charalampos Tsitouras (2008)
2. Mathematical Methods in Applied Sciences, 30, 14, 1609 - 1854, "*Approximation, stability and error analysis*", edited by Klaus G urlebeck and Theodore Simos (2007)
3. Communications in Mathematical and in Computer Chemistry (MATCH), 53, 2, "*Papers presented on the International Conference on Computational Methods in Sciences and Engineering 2003*" (2005)

### **Reviewer for 26 International Conferences**

1. Computer Aspects of Numerical Algorithms (CANA) 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017.
2. International Conference of Numerical Analysis and Applied Mathematics (ICNAAM) 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011.
3. International Conference of Computational Methods in Sciences and Engineering (ICCMSE) 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011.
4. International electronic Conference on Computer Science (IeCCS) 2005, 2006, 2007, 2008.

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### **General Public Presentations**

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- Presentation of the talk entitled "Greeks and Mathematics" during the "Greek Studies Day", organized by the College of Arts and Sciences, Qatar University, 18 May 2016.

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## **Awards**

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- Young Scientists Prize on Numerical Analysis and Applied Mathematics awarded by the Scientific Committee of the International Conference of Numerical Analysis and Applied Mathematics, Rhodes, Greece (Sep 2005).
  - Ericsson Award of Excellence in Telecommunications, Athens, Greece (Jun 2005).
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## **Participation in Conferences**

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### **Participation in 28 International Conferences**

- The 27th Biennial Numerical Analysis Conference 2017 (NANCONF 2017), 27 to 30 June 2017, University of Strathclyde, Glasgow, Scotland, UK.
- Computational Techniques and Applications Conference (CTAC 2016), November 27-30, 2016, Melbourne, Australia.
- Global Conference on Applied Physics & Mathematics 2016, July 25-27, 2016, Rome, Italy.
- 3rd ECCOMAS Young Investigators Conference (YIC) – 6th GACM Colloquium on Computational Mechanics, July 20-23, 2015, Aachen, Germany.
- 3rd Aachen Conference on Computational Engineering Science (AC.CES), July 23-24, 2015, Aachen, Germany.
- International Conference Computational and Mathematical Methods in Science and Engineering (CMMSE) 2014, July 3-7, 2014, Rota, Cadiz, Spain.
- International Conference of Numerical Analysis and Applied Mathematics (ICNAAM) 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, Greece.
- International Conference of Computational Methods in Sciences and Engineering (ICCMSE) 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, Greece.
- International Electronic Conference on Computer Science (IeCCS) 2005, 2006, 2007, 2008, Greece.
- Gene around the World 2008, Tripolis, Greece.

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## Appendix: Publications

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(In reverse chronological order)

### Publications in Refereed Journals

- P37. F. Tsitoura, **Z.A. Anastassi**, J.L. Marzuola, P.G. Kevrekidis, and D.J. Frantzeskakis, Dark Soliton Scattering in Symmetric and Asymmetric Double Potential Barriers, *Physics Letters A*, 381, 31, 2514-2520 (2017).
- P36. **Z.A. Anastassi**, G. Fotopoulos, D.J. Frantzeskakis, T.P. Horikis, N.I. Karachalios, P.G. Kevrekidis, I.G. Stratis, and K. Vetas, Spatiotemporal algebraically localized waveforms for a nonlinear Schrödinger model with gain and loss, *Physica D*, 355, 24-33 (2017).
- P35. F. Tsitoura, **Z.A. Anastassi**, J.L. Marzuola, P.G. Kevrekidis, and D.J. Frantzeskakis, Dark solitons near potential and nonlinearity steps, *Physical Review A*, 94, 063612 (2016).
- P34. **Z.A. Anastassi**, A.A. Kosti, A 6(4) Optimized Embedded Runge-Kutta-Nyström Pair for the Numerical Solution of Periodic Problems, *Journal of Computational and Applied Mathematics*, 275, 311-320 (2015).
- P33. A.A. Kosti, **Z.A. Anastassi**, Explicit Almost P-Stable Runge-Kutta-Nyström Methods for the Numerical Solution of the Two-Body Problem, *Computational and Applied Mathematics*, 34, 2, 647-659 (2015).
- P32. G.A. Panopoulos, **Z.A. Anastassi**, T.E. Simos, A New Eight-Step Symmetric Embedded Predictor-Corrector Method (EPCM) for Orbital Problems and Related IVPs with Oscillatory Solutions, *The Astronomical Journal*, 145, 75 (2013).
- P31. **Z.A. Anastassi**, T.E. Simos, A parametric symmetric linear four-step method for the efficient integration of the Schrödinger equation and related oscillatory problems, *Journal of Computational and Applied Mathematics*, 236, 16, 3880-3889 (2012) **(Highly Cited Paper)**.
- P30. I. Alolyan, **Z.A. Anastassi**, T.E. Simos, A New Family of Symmetric Linear Four-Step Methods for the Efficient Integration of the Schrödinger Equation and Related Oscillatory Problems, *Applied Mathematics and Computation*, 218, 9, 5370-5382 (2012) **(Highly Cited Paper)**.
- P29. A.A. Kosti, **Z.A. Anastassi**, T.E. Simos, An optimized explicit Runge-Kutta-Nyström method for the numerical solution of orbital and related periodical initial value problems, *Computer Physics Communications*, 183, 3, 470-479 (2011).
- P28. A.A. Kosti, **Z.A. Anastassi**, T.E. Simos, Construction of an optimized explicit Runge-Kutta-Nyström method for the numerical solution of oscillatory initial value

problems, *Computers and Mathematics with Applications*, 61, 11, 3381-3390 (2011) **(Highly Cited Paper)**.

P27. G.A. Panopoulos, **Z.A. Anastassi**, T. E. Simos, A Symmetric Eight-Step Predictor-Corrector Method for the Numerical Solution of the Radial Schrödinger Equation and related IVPs with oscillating solutions, *Computer Physics Communications*, 182, 8, 1626-1637 (2011).

P26. **Z.A. Anastassi**, A new symmetric linear eight-step method with fifth trigonometric order for the efficient integration of the Schrödinger equation, *Applied Mathematics Letters*, 24, 8, 1468-1472 (2011).

P25. G.A. Panopoulos, **Z.A. Anastassi**, T. E. Simos, A New Symmetric Eight-Step Predictor-Corrector Method for the Numerical Solution of the Radial Schrödinger Equation and Related Orbital Problems, *International Journal of Modern Physics C*, 22, 2, 133-153 (2011).

P24. D.F. Papadopoulos, **Z.A. Anastassi**, T.E. Simos, An optimized Runge-Kutta-Nyström method for the numerical solution of the Schrödinger equation and related problems, *MATCH Commun. Math. Comput. Chem.*, 64, 2, 551-566 (2010).

P23. D.F. Papadopoulos, **Z.A. Anastassi**, T.E. Simos, A modified phase-fitted and amplification-fitted Runge-Kutta-Nyström method for the numerical solution of the radial Schrödinger equation, *Journal of Molecular Modeling*, 16, 8, 1339-1346 (2010).

P22. A.A. Kosti, **Z.A. Anastassi**, T.E. Simos, An optimized explicit Runge-Kutta method with increased phase-lag order for the numerical solution of the Schrödinger equation and related problems, *Journal of Mathematical Chemistry*, 47, 1, 315-330 (2010).

P21. **Z.A. Anastassi** and T.E. Simos: Numerical Multistep Methods for the Efficient Solution of Quantum Mechanics and Related Problems, *Physics Reports*, vol. 482-483, pp. 1-240 (2009) **(review paper)**.

P20. D.F. Papadopoulos, **Z.A. Anastassi**, T.E. Simos, A Phase-Fitted Runge-Kutta-Nyström method for the Numerical Solution of Initial Value Problems with Oscillating Solutions, *Computer Physics Communications*, 180, 10, 1839-1846 (2009).

P19. D.S. Vlachos, **Z.A. Anastassi**, T.E. Simos, High order phase fitted multistep integrators for the Schrödinger equation with improved frequency tolerance, *Journal of Mathematical Chemistry*, 46, 4, 1009-1049 (2009).

P18. D.S. Vlachos, **Z.A. Anastassi**, T.E. Simos, High order multistep methods with improved phase-lag characteristics for the integration of the Schrödinger equation, *Journal of Mathematical Chemistry*, 46, 2, 692-725 (2009).

P17. **Z.A. Anastassi**, D.S. Vlachos, T. E. Simos, A new methodology for the construction of numerical methods for the approximate solution of the Schrödinger equation, *Journal of Mathematical Chemistry*, 46, 2, 652-691 (2009).

P16. **Z.A. Anastassi**, D.S. Vlachos, T. E. Simos, A new methodology for the development of numerical methods for the numerical solution of the Schrödinger equation, *Journal of Mathematical Chemistry*, 46, 2, 621-651 (2009).

- P15. D.S. Vlachos, **Z.A. Anastassi**, T.E. Simos, A New Family of Multistep Methods with Improved Phase Lag Characteristics for the Integration of Orbital Problems, *The Astronomical Journal*, 138, 86-94 (2009).
- P14. G.A. Panopoulos, **Z.A. Anastassi**, T. E. Simos, Two optimized symmetric eight-step implicit methods for initial-value problems with oscillating solutions, *Journal of Mathematical Chemistry*, 46, 2, 604-620 (2009).
- P13. **Z.A. Anastassi**, D.S. Vlachos, T. E. Simos, A family of Runge-Kutta methods with zero phase-lag and derivatives for the numerical solution of the Schrödinger equation and related problems, *Journal of Mathematical Chemistry*, 46, 4, 1158-1171 (2009).
- P12. **Z.A. Anastassi** and T.E. Simos: A family of two-stage two-step methods for the numerical integration of the Schrödinger equation and related IVPs with oscillating solution, *Journal of Mathematical Chemistry*, 45, 4, 1102-1129 (2009).
- P11. **Z.A. Anastassi** and T.E. Simos: A Six-Step P-stable Trigonometrically-Fitted Method for the Numerical Integration of the Radial Schrödinger Equation, *MATCH Commun. Math. Comput. Chem.*, 60, 3, 803-830 (2008).
- P10. G.A. Panopoulos, **Z.A. Anastassi** and T.E. Simos: Two New Optimized Eight-Step Symmetric Methods for the Efficient Solution of the Schrödinger Equation and Related Problems, *MATCH Commun. Math. Comput. Chem.*, 60, 3, 773-785 (2008).
- P9. T.V. Triantafyllidis, **Z.A. Anastassi** and T.E. Simos: Two Optimized Runge-Kutta Methods for the Solution of the Schrödinger Equation, *MATCH Commun. Math. Comput. Chem.*, 60, 3, 753-771 (2008).
- P8. **Z.A. Anastassi** and T.E. Simos: New Trigonometrically Fitted Six-Step Symmetric Methods for the Efficient Solution of the Schrödinger Equation, *MATCH Commun. Math. Comput. Chem.*, 60, 3, 733-752 (2008).
- P7. **Z.A. Anastassi** and T.E. Simos: A Family of Exponentially-Fitted Runge-Kutta Methods with Exponential Order up to Three for the Numerical Solution of the Schrödinger Equation, *Journal of Mathematical Chemistry*, 41, 1, 79-100 (2007).
- P6. **Z.A. Anastassi** and T.E. Simos: A Trigonometrically-Fitted Runge-Kutta Method for the Numerical Solution of Orbital Problems, *New Astronomy*, 10, 301-309 (2005).
- P5. **Z.A. Anastassi** and T.E. Simos: Trigonometrically Fitted Fifth Order Runge-Kutta Methods for the Numerical Solution of the Schrödinger Equation, *Mathematical and Computer Modelling*, 42 (7-8), 877-886 (2005).
- P4. **Z.A. Anastassi** and T.E. Simos: Trigonometrically Fitted Runge-Kutta Methods for the Numerical Solution of the Schrödinger Equation, *Journal of Mathematical Chemistry*, 37, 3, 281-293 (2005).
- P3. **Z.A. Anastassi** and T.E. Simos: A Dispersive-Fitted and Dissipative-Fitted Explicit Runge-Kutta method for the Numerical Solution of Orbital Problems, *New Astronomy*, 10, 31-37 (2004).
- P2. **Z.A. Anastassi** and T.E. Simos: An Optimized Runge-Kutta method for the Solution of Orbital Problems, *Journal of Computational and Applied Mathematics*, 175, 1-9 (2005).

P1. **Z.A. Anastassi** and T.E. Simos: Special Optimized Runge-Kutta methods for IVPs with Oscillating Solutions, *International Journal of Modern Physics C*, 15, 1-15 (2004).

### **Abstracts in Conference Proceedings**

C34. **Z.A. Anastassi**, G. Fotopoulos, D.J. Frantzeskakis, T.P. Horikis, N.I. Karachalios, P.G. Kevrekidis, I.G. Stratis, and K. Vetas, Numerical simulations of a nonlinear Schrödinger model with gain and loss, The 27th Biennial Numerical Analysis Conference 2017 (NANCONF 2017).

C33. **Z.A. Anastassi**, Fitted Linear Multistep Methods for the Solution of Periodic Differential Equations, Computational Techniques and Applications Conference (CTAC 2016).

C32. F. Tsitoura, **Z. A. Anastassi**, J. L. Marzuola, P. G. Kevrekidis, and D. J. Frantzeskakis, Computation of Dark Solitons near Potential and Nonlinearity Steps, Global Conference on Applied Physics & Mathematics 2016.

C31. **Z.A. Anastassi**, A.A. Kosti, A family of optimized symmetric linear multistep methods for the numerical solution of differential equations, 3rd ECCOMAS Young Investigators Conference (YIC 2015).

C30. **Z.A. Anastassi**, A.A. Kosti, A new Runge-Kutta-Nyström pair for the numerical solution of periodic initial value problems, 14th International Conference Computational and Mathematical Methods in Science and Engineering, (CMMSE 2014).

C29. A.A. Kosti, **Z.A. Anastassi**, T.E. Simos, A Fitted Runge-Kutta-Nyström Method with Fifth Order for the Integration of the Two-Body Problem, Proceedings of the International Conference of Numerical Analysis and Applied Mathematics (ICNAAM) 2011, Conference Proceedings, 1389, 1597-1600, included in Thomson ISI Proceedings.

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