Georgios Akrivis

Curriculum vitæ

Personal data

Year of birth 1950

Place of birth Chrysovitsa by Ioannina, Greece

Education

1968–1973 **Bachelor**, *University of Ioannina*, Ioannina, Greece.
Mathematics

1977–1983 **PhD**, *University of Munich*, Munich, Germany.
Mathematics, Numerical Analysis

Service to the Profession

2019–present **Associate Editor** of SIAM Journal on Numerical Analysis.

2018–2019 **Member** of the Sectorial Scientific Council (TES) for Mathematics and Information Sciences, National Council for Research and Innovation, GSRT, Greece.

2001–2013 **Associate Editor** of Computational Methods in Applied Mathematics.

Professional Appointments

2018–present **Professor Emeritus**, *Department of Computer Science & Engineering, University of Ioannina*, Ioannina, Greece.

2018–present **Collaborating Researcher**, *Institute of Applied & Computational Mathematics*, FORTH, Heraklion, Crete, Greece.

1995–2018 **Professor**, *Department of Computer Science & Engineering, University of Ioannina*, Ioannina, Greece.

1991–1995 **Associate Professor**, *Mathematics Department, University of Crete*, Heraklion, Crete, Greece.

1987–1991 **Assistant Professor**, *Mathematics Department, University of Crete*, Heraklion, Crete, Greece.

1984–1987 **Visiting Assistant Professor**, *Mathematics Department, University of Crete*, Heraklion, Crete, Greece.

March 2025 **Visiting Professor**, *Harbin Institute of Technology*, Shenzhen, China.

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November 2024 **Visiting Professor**, *Harbin Institute of Technology*, Shenzhen, China.

March 2024 **Visiting Scholar**, *School of Mathematics and Statistics, Huazhong University of Science and Technology*, Wuhan, China.

November 2023 **Visiting Professor**, *Harbin Institute of Technology*, Shenzhen, China.

Fall 2021 **Visiting Professor**, *School of Mathematics and Statistics, Huazhong University of Science and Technology*, Wuhan, China.

Fall 2019 **Visiting Scholar**, *Beijing Computational Science Research Center*, Beijing, China.

Spring 2019 **Visiting Professor**, *School of Mathematics and Statistics, Huazhong University of Science and Technology*, Wuhan, China.

October 2017 **Visiting Professor**, *Department of Mathematical Sciences, Chalmers University of Technology and the University of Göteborg*, Göteborg, Sweden.

Fall 2012 **Visiting Researcher**, *Basque Center for Applied Mathematics*, Bilbao, Basque Country, Spain.

Fall 2001, 2003, 2005, 2007, 2009 **Visiting Professor**, *Mathematics and Statistics Department, University of Cyprus*, Nicosia, Cyprus.

June 2009 **Invited Professor**, *Institut d'Analyse et Calcul Scientifique, Section de Mathématiques, École Polytechnique Fédérale de Lausanne*, Lausanne, Switzerland.

October 1994, June 1999 **Invited Professor**, *Mathematics Department, Université de Rennes I*, Rennes, France.

Fall 1991 **Visiting Associate Professor**, *Mathematics Department, University of Tennessee*, Knoxville, TN, USA.

Spring 1989 **Visiting Assistant Professor**, *Mathematics Department, University of Tennessee*, Knoxville, TN, USA.

1980–1984 **Teaching Fellow and Research Assistant**, *Mathematics Institute, University of Munich*, Munich, Germany.

Research Area

Numerical Analysis **Numerical methods for evolution P.D.E's**.

Languages

Greek, English, German

Conference in my honor

Numerical Analysis of Evolution PDE's, *Organizers: P. Chatzipantelidis, Ch. Makridakis and G. Zouraris, Speakers: P. Chatzipantelidis, M. Crouzeix, V. Dougalis, E. Georgoulis, S. Larsson, Ch. Lubich, Ch. Makridakis, C. Palencia, G. Zouraris*, Heraklion, Crete, September 20, 2018, Institute of Applied and Computational Mathematics, FORTH, and Department of Mathematics and Applied Mathematics, University of Crete.

Conferences

Plenary speaker — **Second Congress of Greek Mathematicians SCGM-2022**, *Athens, Greece*, July 4–8, 2022.

Invited speaker — **In several conferences**, *with most recent one the international conference "Frontiers of Numerical PDEs: Fractional Differential Equations, Geometric Evolution, Liquid Crystals, Optimal Transport, and Adaptivity", University of Maryland, College Park, USA, May 16–19, 2023.*

Speaker — **In many conferences**.

Member of scientific committees, *of several conferences.*

Co-organizer — **Numerical Methods for Evolution Partial Differential Equations**, *Euroconferences in Mathematics on Crete*: *Training and Mobility of Researchers Programme*, Anogia, Crete, June 24–30, 2000.

Member of scientific committee — **Modern Mathematical Methods in Science and Technology (M3ST)**, *Paros Island, Greece, September 7–9, 2006.*

Member of scientific committee — **Modern Mathematical Methods in Science and Technology (M3ST)**, *Poros Island, Greece, September 7–9, 2009.*

Member of scientific committee — **Modern Mathematical Methods in Science and Technology (M3ST)**, *Kalamata, Greece, August 26–28, 2012.*

Co-organizer — **6th Workshop in Crete on Numerical Methods for Evolution Equations**, *Heraklion, Crete*, September 21–22, 2012.

Co-organizer — **Fifth International Conference in Numerical Analysis (NumAn 2012)**, *Recent Approaches to Numerical Analysis*: *Theory, Methods and Applications*, Ioannina, September 5–8, 2012.

Co-organizer — **7th Workshop in Crete on Numerical Methods for Evolution Equations**, *Heraklion, Crete*, September 19–20, 2014.

Member of scientific committee — **Modern Mathematical Methods in Science and Technology (M3ST)**, *Kalamata, Greece, August 30 – September 1, 2015.*

Co-organizer — **8th Workshop in Crete on Numerical Methods for Evolution Equations**, *Heraklion, Crete*, September 23–24, 2016.

Co-organizer — **9th Workshop in Crete on Numerical Methods for Evolution Equations**, *Heraklion, Crete*, September 21–22, 2018.

Co-organizer — **10th Workshop in Crete on Numerical Methods for Evolution Equations**, *Heraklion, Crete*, September 17–18, 2021.

Co-organizer **Applied and Numerical Analysis of Partial Differential Equations**, *A conference in memoriam of Vassilios Dougalis*, Heraklion, Crete, June 8–10, 2023.

Co-organizer **11th Workshop in Crete on Numerical Methods for Evolution Equations**, *Heraklion, Crete*, September 22–23, 2023.

Co-organizer **Forum of Numerical Mathematics**, *Harbin Institute of Technology, Shenzhen, China*, September 13–16, 2024.

Co-organizer **12th Workshop in Crete on Numerical Methods for Evolution Equations**, *Heraklion, Crete*, September 19–20, 2025.

Graduate Students

1995 **Georgios Zouraris**, *Ph.D. Thesis*, Analysis of numerical methods for evolution partial differential equations, University of Crete.
He is currently Professor at the Department of Mathematics and Applied Mathematics of the University of Crete.

1998 **Panagiotis Chatzipantelidis**, *Ph.D. Thesis*, On finite volume and finite element methods for boundary and initial–boundary value problems, University of Crete.
He is currently Associate Professor at the Department of Mathematics and Applied Mathematics of the University of Crete.

2000 **Fotini Karakatsani**, *Master's Thesis*, Implicit–explicit multistep methods for evolution partial differential equations, University of Ioannina.
She is currently Assistant Professor at the Department of Mathematics of the University of Ioannina.

Invited Talks at Universities and Research Centers (selected)

University Munich (July 1990, July 1992), University Mainz (July 1992), University Rennes I (October 1994, June 1999), Chalmers University of Technology and the University of Göteborg (May 1995, November 1999, October 2017, two talks: October 4 and October 25, October 2022), University of Crete (February 1998, January 2002), University of Athens (April 1998, June 2014), Research Center of Crete (June 1998), University of Cyprus (September 2001, October 2002, November 2005, June 2014, December 2016), University of Maryland at College Park (April 2004, April 2010, May 2023), EPFL (June 2009), University of Valladolid (October 2012, November 2012), Basque Center for Applied Mathematics (November 2012), Imperial College London (January 2013), University Leicester (January 2013), University Tübingen (January 2014, February 2018), University Sussex (February 2014), City University of Hong Kong (June 2017), University Dundee (January 2018), University Strathclyde (January 2018), University Chester (June 2018), Wuhan University (March 2019, November 2023), Huazhong University of Science and Technology (May 2019, December 2021, two talks: December 13 and December 21, January 2022, October 2022, November 2022, October 2023, November 2023, March 2024, April 2024), Beijing Computational Science Research Center (November 2019 and October 2021), Shanghai Normal University, Shanghai, China (December 2019 and March 2024), The Hong Kong Polytechnic University (January 2021, October 2021, Colloquium, July 2022: three talks, Colloquium, November 2023), Irish Numerical Analysis Forum (January 2022), University Freiburg (June 2023), Harbin Institute of Technology, Shenzhen, China (November 2023, November 2024), University Paderborn (May 2024), Southern University of Science and Technology, Shenzhen, China (September 2024).

Publications

- **Journal Publications**.

1. R. P. Agarwall, G. Akrivis: *Boundary value problems occurring in plate deflection theory.* J. of Comp. and Appl. Math. **8** (1982) 145–154.
2. G. Akrivis, K.–J. Förster: *On the definiteness of quadrature formulae of Clenshaw–Curtis type.* Computing **33** (1984) 363–366.
3. G. Akrivis: *Fehlerabschätzungen für Gauss–Quadraturformeln.* Numer. Math. **44** (1984) 261–278.
4. G. Akrivis, A. Burgstaller: *Fehlerabschätzungen für nichtsymmetrische Gauss–Quadraturformeln.* Numer. Math. **47** (1985) 535–543.
5. G. Akrivis: *The error norm of certain Gaussian quadrature formulae.* Math. Comp. **45** (1985) 513–519.
6. G. D. Akrivis, V. A. Dougalis: *Finite difference discretization with variable mesh of the Schrödinger equation in a variable domain.* Bull. Greek Mathem. Soc. **31** (1990) 19–28.
7. G. D. Akrivis, V. A. Dougalis: *On a class of conservative, highly accurate Galerkin methods for the Schrödinger equation.* (RAIRO:) Math. Model. and Numer. Anal. **25** (1991) 643–670.
8. G. D. Akrivis, V. A. Dougalis: *Finite difference discretizations of some initial and boundary value problems with interface.* Math. Comp. **56** (1991) 505–522.
9. G. D. Akrivis, V. A. Dougalis, O. A. Karakashian: *On fully discrete Galerkin methods of second–order temporal accuracy for the nonlinear Schrödinger equation.* Numer. Math. **59** (1991) 31–53.
10. G. D. Akrivis: *Finite difference discretization of the Kuramoto–Sivashinsky equation.* Numer. Math. **63** (1992) 1–11.
11. G. D. Akrivis: *Finite difference discretization of the cubic Schrödinger equation.* IMA J. Numer. Anal. **13** (1993) 115–124.
12. O. Karakashian, G. D. Akrivis, V. A. Dougalis: *On optimal–order error estimates for the nonlinear Schrödinger equation.* SIAM J. Numer. Anal. **30** (1993) 377–400.
13. G. D. Akrivis, V. A. Dougalis, N. A. Kampanis: *On Galerkin methods for the wide–angle parabolic equation.* Journal of Computational Acoustics **2** (1994) 99–112.
14. G. D. Akrivis, V. A. Dougalis, N. A. Kampanis: *Error estimates for finite element methods for a wide–angle parabolic equation.* Appl. Numer. Math. **16** (1994) 81–100.
15. G. Akrivis, M. Crouzeix, V. Thomée: *Numerical methods for ultraparabolic equations.* Calcolo **31** (1994) 179–190.
16. G. Akrivis: *High–order finite element methods for the Kuramoto–Sivashinsky equation.* (RAIRO:) Math. Model. and Numer. Anal. **30** (1996) 157–183.
17. G. D. Akrivis, V. A. Dougalis, G. E. Zouraris: *Error estimates for finite difference methods for the wide–angle "parabolic" equation.* SIAM J. Numer. Anal. **33** (1996) 2488–2509.
18. G. Akrivis, V. A. Dougalis, O. Karakashian: *Solving the systems of equations arising in the discretization of some nonlinear p.d.e.'s by implicit Runge–Kutta methods.* (RAIRO:) Math. Model. and Numer. Anal. **31** (1997) 251–287.
19. G. Akrivis, M. Crouzeix, Ch. Makridakis: *Implicit–explicit multistep finite element methods for nonlinear parabolic problems.* Math. Comp. **67** (1998) 457–477.

20. G. Akrivis: *Finite difference methods for a wide–angle 'parabolic' equation.* SIAM J. Numer. Anal. **36** (1999) 317–329.

21. G. Akrivis, M. Crouzeix, Ch. Makridakis: *Implicit–explicit multistep methods for quasilinear parabolic equations.* Numer. Math. **82** (1999) 521–541.

22. G. D. Akrivis, V. A. Dougalis, G. E. Zouraris: *Finite difference schemes for the 'parabolic' equation in a variable depth environment with a rigid bottom boundary condition.* SIAM J. Numer. Anal. **39** (2001) 539–565.

23. G. D. Akrivis, V. A. Dougalis, O. A. Karakashian, W. R. McKinney: *Numerical approximation of blow-up of radially symmetric solutions of the nonlinear Schrödinger equation.* SIAM J. Scientific Computing **25** (2003) 186–212.

24. G. Akrivis, O. Karakashian, F. Karakatsani: *Linearly implicit methods for nonlinear evolution equations.* Numer. Math. **94** (2003) 403–418.

25. G. Akrivis, F. Karakatsani: *Modified BDF methods for nonlinear parabolic equations.* BIT Numer. Math. **43** (2003) 467–483.

26. G. Akrivis, M. Crouzeix: *Linearly implicit methods for nonlinear parabolic equations.* Math. Comp. **73** (2004) 613–635.

27. G. Akrivis, Ch. Makridakis: *Galerkin time–stepping methods for nonlinear parabolic equations.* (ESAIM:) Math. Model. and Numer. Anal. **38** (2004) 261–289.

28. G. Akrivis, Y. S. Smyrlis: *Implicit–explicit BDF methods for the Kuramoto–Sivashinsky equation.* Appl. Numer. Math. **51** (2004) 151–169.

29. G. Akrivis, S. Larsson: *Linearly implicit finite element methods for the time–dependent Joule heating problem.* BIT Numer. Math. **45** (2005) 429–442.

30. G. Akrivis, Ch. Makridakis, R. H. Nochetto: *A posteriori error estimates for the Crank–Nicolson method for parabolic equations.* Math. Comp. **75** (2006) 511–531.

31. G. Akrivis, Ch. Makridakis, R. H. Nochetto: *Optimal order a posteriori error estimates for a class of Runge–Kutta and Galerkin methods.* Numer. Math. **114** (2009) 133–160.

32. G. Akrivis, P. Chatzipantelidis: *A posteriori error estimates for the two-step backward differentiation formula method for parabolic equations.* SIAM J. Numer. Anal. **48** (2010) 109–132.

33. G. Akrivis, D. T. Papageorgiou, Y. S. Smyrlis: *Linearly implicit methods for a semilinear parabolic system arising in two–phase flows.* IMA J. Numer. Anal. **31** (2011) 299–321.

34. G. Akrivis, Y. S. Smyrlis: *Linearly implicit schemes for a class of dispersive–dissipative systems.* Calcolo **48** (2011) 145-172.

35. G. Akrivis, Ch. Makridakis, R. H. Nochetto: *Galerkin and Runge–Kutta methods*: *Unified formulation, a posteriori error estimates and nodal superconvergence.* Numer. Math. **118** (2011) 429–456.

36. G. Akrivis, D. T. Papageorgiou, Y.–S. Smyrlis: *Computational study of the dispersively modified Kuramoto–Sivashinsky equation.* SIAM J. Scientific Computing **34** (2012) A792–A813.

37. G. Akrivis: *Implicit–explicit multistep methods for nonlinear parabolic equations.* Math. Comp. **82** (2013) 45–68.

38. G. Akrivis, D. T. Papageorgiou, Y.–S. Smyrlis: *On the analyticity of certain dispersive–dissipative systems.* Bull. London Math. Soc. **45** (2013) 52–60.

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39. G. Akrivis: *Stability of implicit–explicit backward difference formulas for nonlinear parabolic equations.* SIAM J. Numer. Anal. **53** (2015) 464–484.

40. G. Akrivis, Ch. Lubich: *Fully implicit, linearly implicit and implicit–explicit backward difference formulae for quasi-linear parabolic equations.* Numer. Math. **131** (2015) 713–735.

41. G. Akrivis, A. Kalogirou, D. T. Papageorgiou, Y.–S. Smyrlis: *Linearly implicit schemes for multidimensional Kuramoto–Sivashinsky type equations arising in falling film flows.* IMA J. Numer. Anal. **36** (2016) 317–336.

42. G. Akrivis, E. Katsoprinakis: *Backward difference formulae*: *New multipliers and stability properties for parabolic equations.* Math. Comp. **85** (2016) 2195–2216.

43. G. Akrivis: *Stability properties of implicit–explicit multistep methods for a class of nonlinear parabolic equations.* Math. Comp. **85** (2016) 2217–2229.

44. G. Akrivis, Y.–S. Smyrlis: *Backward difference formulae for Kuramoto–Sivashinsky type equations.* Calcolo **54** (2017) 685–709.

45. G. Akrivis, B. Li, Ch. Lubich: *Combining maximal regularity and energy estimates for time discretizations of quasilinear parabolic equations.* Math. Comp. **86** (2017) 1527–1552.

46. G. Akrivis, B. Li: *Maximum norm analysis of implicit–explicit backward difference formulae for nonlinear parabolic equations.* IMA J. Numer. Anal. **38** (2018) 75–101.

47. G. Akrivis: *Stability of implicit and implicit–explicit multistep methods for nonlinear parabolic equations.* IMA J. Numer. Anal. **38** (2018) 1768–1796.

48. G. Akrivis, B. Li, D. Li: *Energy-decaying extrapolated RK-SAV methods for the Allen–Cahn and Cahn–Hilliard equations.* SIAM J. Scientific Computing **41** (2019) A3703–A3727.

49. G. Akrivis, E. Katsoprinakis: *Maximum angles of $A(\vartheta)$-stability of backward difference formulae.* BIT Numer. Math. **60** (2020) 93–99.

50. G. Akrivis, E. Katsoprinakis: *An analogue to the $A(\vartheta)$-stability concept for implicit–explicit BDF methods.* SIAM J. Numer. Anal. **58** (2020) 3475–3503.

51. G. Akrivis, M. Feischl, B. Kovács, Ch. Lubich: *Higher-order linearly implicit full discretization of the Landau–Lifshitz–Gilbert equation.* Math. Comp. **90** (2021) 995–1038.

52. G. Akrivis, B. Li, J. Wang: *Convergence of a second-order energy-decaying method for the viscous rotating shallow water equation.* SIAM J. Numer. Anal. **59** (2021) 265–288.

53. G. Akrivis, D. Li: *Structure-preserving Gauss methods for the nonlinear Schrödinger equation.* Calcolo **58** (2021), Paper no. 17, 25 pp.

54. G. Akrivis, B. Li: *Linearization of the finite element method for gradient flows by Newton's method.* IMA J. Numer. Anal. **41** (2021) 1411–1440.

55. G. Akrivis, M. Chen, F. Yu, Z. Zhou: *The energy technique for the six-step BDF method.* SIAM J. Numer. Anal. **59** (2021) 2449–2472.

56. G. Akrivis, B. Li: *Error estimates for fully discrete BDF finite element approximations of the Allen–Cahn equation.* IMA J. Numer. Anal. **42** (2022) 363–391.

57. G. Akrivis, C. G. Makridakis: *On maximal regularity estimates for discontinuous Galerkin time-discrete methods.* SIAM J. Numer. Anal. **60** (2022) 180–194.

58. G. Akrivis, C. G. Makridakis: *A posteriori error estimates for Radau IIA methods via maximal regularity.* Numer. Math. **150** (2022) 691–717.

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59. G. Akrivis, M. Chen, J. Han, F. Yu, Z. Zhang: *The variable two-step BDF method for parabolic equations.* BIT Numer. Math. **64** (2024), Paper no. 14, 21 pp.

60. G. Akrivis, B. Li, R. Tang, H. Zhang: *High-order mass-, energy- and momentum-conserving methods for the nonlinear Schrödinger equation.* J. Comp. Phys. **532** (2025) 113974, 21 pp.

61. G. Akrivis, S. Bartels, Ch. Palus: *Quadratic constraint consistency in the projection-free approximation of harmonic maps and bending isometries.* Math. Comp. 10.1090/mcom/4035 (to appear).

62. G. Akrivis, M. Chen, F. Yu: *The weighted and shifted seven-step BDF method for parabolic equations.* IMA J. Numer. Anal. 10.1093/imanum/drae089 (to appear).

- **Publications in Proceedings of Conferences**.

i. G. Akrivis: *Die Fehlernorm spezieller Gauss–Quadraturformeln.* In: Constructive Methods for the Practical Treatment of Integral Equations, International Series of Numerical Mathematics **73**, 1985, pp. 13–19.

ii. G. D. Akrivis, V. A. Dougalis: *On a high-order accurate Galerkin–type full discretization of the Schrödinger equation.* In: Proceedings of the 9th Conference on Problems and Methods in Mathematical Physics (F. Kuhnert and B. Silbermann, eds.), Teubner–Texte zur Mathematik **111**, Leipzig 1988, pp. 18–26.

iii. G. D. Akrivis, V. A. Dougalis: *On a conservative, high-order finite element scheme for the "parabolic" equation.* In: Computational Acoustics – Volume 1 (Proceedings of the second IMACS Symposium on Computational Acoustics, Princeton University, D. Lee, A. Cakmak and R. Vichnevetsky, eds.), Elsevier–North Holland, 1989, pp. 17–26.

iv. G. D. Akrivis, V. A. Dougalis: *On a conservative finite difference method for the third-order, wide–angle parabolic equation.* In: Computational Acoustics: Acoustic Propagation – Volume 2 (Proceedings of the third IMACS International Symposium on Computational Acoustics, Harvard University, D. Lee, R. Vichnevetsky and A. R. Robinson, eds.), North–Holland, 1993, pp. 209–220.

v. G. D. Akrivis, V. A. Dougalis, O. A. Karakashian: *Numerical methods for the nonlinear Schrödinger equation.* In: Advances in Computer Methods for Partial Differential Equations (R. Vichnevetsky, D. Knight and G. Richter, eds.), 1992 IMACS, pp. 1–7.

vi. G. D. Akrivis, V. A. Dougalis, N. A. Kampanis: *On finite element approximations of the wide-angle parabolic equation.* In: Advances in Computer Methods for Partial Differential Equations (R. Vichnevetsky, D. Knight and G. Richter, eds.), 1992 IMACS, pp. 8–14.

vii. G. D. Akrivis, V. A. Dougalis, N. A. Kampanis: *On finite element methods for interface problems in underwater acoustics.* In: Proceedings of the 1st National Congress on Computational Mechanics, Athens (D. E. Beskos, ed.), 1992, University of Patras Press, pp. 863–870.

viii. G. D. Akrivis, V. A. Dougalis, O. A. Karakashian, W. R. McKinney: *Galerkin–finite element methods for the nonlinear Schrödinger equation.* In: Hellenic Research in Mathematics and Informatics '92 (E. A. Lipitakis, ed.), Hellenic Mathematical Society, pp. 421–442, Also in: Advances on Computer Mathematics and its Applications, World Scientific, Singapore, 1993, pp. 85–106.

ix. G. D. Akrivis: *Finite element discretization of the Kuramoto–Sivashinsky equation.* Numerical Analysis and Mathematical Modelling, Banach Center Publications **29** (1994) 155–163.

x. G. D. Akrivis, V. A. Dougalis, O. A. Karakashian, W. R. McKinney: *Numerical approximation of singular solutions of the damped nonlinear Schrödinger equation.* In: Proceedings of the ENUMATH 97, 2nd European conference on numerical mathematics and advanced applications,

Heidelberg, Germany, 1997, ed. by H. G. Bock, F. Brezzi, R. Glowinski, G. Kanschat, Y. A. Kuznetsov, J. Periaux, R. Rannacher, World Scientific, Singapore, 1998, pp. 117–124.

xi. G. Akrivis, E. H. Georgoulis: *Implicit–explicit multistep methods for nonlinear convection–diffusion equations*. In: Boundary and Interior Layers, Computational and Asymptotic Methods, BAIL 2018, ed. by G. R. Barrenechea, J. Mackenzie, Lecture Notes in Computational Science and Engineering v. 135, Springer, 2020, pp. 59–81.

Books

- G. D. Akrivis, V. A. Dougalis: *Introduction to Numerical Analysis.* Crete University Press, Heraklion, 1997 (1^{st} printing: 1998, 2^{nd} print.: 2000, 3^{rd} print.: 2002, 2^{nd}, revised ed.: 2004, 1^{st} printing: 2005, 2^{nd} print.: 2006, 3^{rd} ed.: 2008, 1^{st} printing: 2009, 4^{th} ed.: 2010, 1^{st} printing: 2011, 2^{nd} print.: 2013, 3^{rd} print.: 2014, 4^{th} print.: 2015, 5^{th} print.: 2017, 5^{th} ed.: 2021, 1^{st} printing: 2022) (in Greek).
- G. D. Akrivis, V. A. Dougalis: *Numerical Methods for Ordinary Differential Equations.* Crete University Press, Heraklion, 2006 (2^{nd} ed.: 2013, 1^{st} printing: 2015, 2^{nd} printing: 2018) (in Greek).
- G. D. Akrivis, N. D. Alikakos: *Partial Differential Equations.* Synchroni Ekdotiki Publications, Athens, 2012 (2^{nd} ed.: 2017) (in Greek).

Courses Taught

1. At the University of Ioannina
   - *for undergraduates*: Introduction to Numerical Analysis, Computational Mathematics, Numerical methods for ordinary differential equations.
   - *for graduates*: Applied Functional Analysis, Numerical methods for partial differential equations, Numerical Analysis, Numerical methods for differential equations.
2. At the University of Crete
   - *for undergraduates*: Introduction to Numerical Analysis, Numerical Linear Algebra, Numerical methods for o.d.e's, Approximation Theory, Finite difference methods for p.d.e's, Calculus I and III, Advanced Calculus, Linear Algebra I, Functional Analysis, Partial Differential Equations.
   - *for graduates*: Numerical Analysis, Galerkin/Finite element methods for elliptic problems, Numerical treatment of p.d.e's, Generalized solutions of p.d.e's, Numerical treatment of initial and boundary value problems, Spectral methods for p.d.e's, Finite difference methods for p.d.e's.
3. At the University of Tennessee
   - Calculus I, II and III (for undergraduates).
4. At the University of Cyprus
   - Linear Algebra I, General Mathematics, Partial Differential Equations, Numerical Analysis II, Calculus, Approximation Theory (for undergraduates), Finite Element Methods (for undergraduates and graduates).
5. At the Basque Center for Applied Mathematics (BCAM, Bilbao, Spain)
   - Numerical Methods for initial value problems (for graduate students and postdoctoral researchers).
6. At the Huazhong University of Science and Technology (HUST, Wuhan, China)
   - Numerical Methods for initial value problems (for undergraduates).
   - Numerical Methods for initial value problems (for graduates).