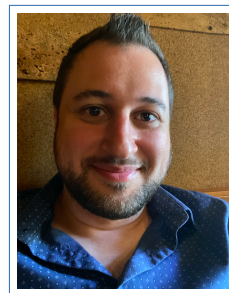# Raffaele D'Ambrosio
Curriculum Vitae

DISIM
University of L'Aquila
Via Vetoio, Loc. Coppito
67100 L'Aquila (AQ)
✉ *raffaele.dambrosio@univaq.it*

Index

Current position

From 1/04/2021 **Full Professor**
(*Sector 01/A5 - Numerical Analysis; Scientific Disciplinary Sector MAT/08 - Numerical Analysis*), Department of Information Engineering and Computer Science and Mathematics, University of L'Aquila.

Past positions

From 1/09/2017 to 31/03/2021 **Associate Professor**
(*Sector 01/A5 - Numerical Analysis; Scientific Disciplinary Sector MAT/08 - Numerical Analysis*), Department of Information Engineering and Computer Science and Mathematics, University of L'Aquila.

From 15/04/2015 to 31/08/2017	**Researcher ex L. 240/2010, art. 24, comma 3, letter A** (*Sector 01/A5 - Numerical Analysis; Scientific Disciplinary Sector MAT/08 - Numerical Analysis*), at the Department of Mathematics, University of Salerno.
From 1/11/2014 to 30/03/2015	**Fulbright Research Scholar** at the School of Mathematics, Georgia Institute of Technology (Atlanta, USA).
From 2/04/2012 to 1/04/2015	**Post-Doc position ex L. 240/2010, art. 22** (*Scientific Disciplinary Sector MAT/08 - Numerical Analysis*), at the Department of Mathematics, University of Salerno, (Call Rep. 2085, Prot. 31903, University of Salerno).
From 1/07/2010 to 30/06/2011	**Post-Doc position ex L. 398/1989, art. 4** at the Department of Mathematics, University of Salerno (Call Rep. 1290, Prot. 19550, University of Salerno).
From 1/11/2006 to 31/10/2009	**Ph.D. student in Mathematics** (*VIII Cycle - New Series*), at the University of Salerno, bi-nationally supervised at Arizona State University, (Call of the Ph.D. position Rep. 2085, Prot. 31903 of the University of Salerno; call for the bi-national supervision Rep. 2036, Prot. 48262 of the University of Salerno); advisors: Beatrice Paternoster and Zdzislaw Jackiewicz.

Academic studies

19/03/2010	**Ph.D. in Mathematics**, with evaluation "ottimo", at the University of Salerno, bi-nationally supervised at Arizona State University. Title of the thesis: "Highly stable multistage numerical methods for Functional Equations: Theory and Implementation Issues". Advisors: Beatrice Paternoster (University of Salerno) and Zdzislaw Jackiewicz (Arizona State University).
19/09/2006	**Master Degree in Mathematics**, cum laude, at the University of Salerno. Title of the thesis: "Metodi a due passi di collocazione per equazioni differenziali ordinarie di tipo speciale". Advisor: Beatrice Paternoster.
17/11/2004	**Degree in Mathematics**, cum laude, at the University of Salerno. Title of the thesis: "Metodi numerici per equazioni iperboliche". Advisor: Giovanni Capobianco.

Prizes

2015	**Honorary Fellow of the *European Society of Computational Methods in Science and Engineering*** granted during the international conference ICNAAM 2015, Rhodes (Greece), where the undersigned has been invited as plenary speaker.
2014	**Fulbright Research Scholarship A.Y. 2014–2015** granted by the U.S.-Italy Fulbright Commission. The related scientific activity was carried out at the School of Mathematics, Georgia Institute of Technology, Atlanta (USA).
2011	**Galileo Galilei Prize 2011 - Young Section** granted by Rotary International and Fondazione Galileo Galilei of Pisa.
2011	**Finalist of the Cavalierato Giovanile Prize 2011** district of Salerno.

Granted projects

As principal investigator

2019 PI of the PRIN Project 2017
title of the project: "*Structure preserving approximation of evolutionary problems*". Ranking approval decree: D.D. 14/02/2019, prot. 240. The project is the only one funded under for the PE1 (Mathematics), Line B (PI under 40).

2019 GNCS-INDAM Project 2019
title of the project: "*Problemi di evoluzione e loro discretizzazione: questioni di stabilità lineare e non lineare*". Involved research units: University of L'Aquila, Gran Sasso Science Institute, University of Bari, "Sapienza" University of Rome, University of Salerno, University of Trieste, University of Udine.

2018 GNCS-INDAM Project 2018
title of the project: "*Approssimazione numerica di problemi di evoluzione: aspetti deterministici e stocastici*". Involved research units: University of L'Aquila, Gran Sasso Science Institute, University of Bari, "Sapienza" University of Rome, University of Salerno, University of Trieste, University of Udine.

2014 Fulbright Research Scholar 2014–2015
title of the project: "*Discontinuous dynamical systems: an accurate and efficient framework for their numerical solution*". The related scientific activity was carried out at the School of Mathematics, Georgia Institute of Technology, Atlanta (USA).

2014 Young Researchers Program GNCS-Indam 2014
title of the project: "*Metodi structure-preserving per problemi di evoluzione*".

2013 Young Researchers Program GNCS-Indam 2013
title of the project: "*Integrazione long-term di sistemi Hamiltoniani e problemi oscillanti*".

2012 Young Researchers Program GNCS-Indam 2012.

2010 Young Researchers Program GNCS-Indam 2010.

2009 Young Researchers Program GNCS-Indam 2009.

As participant

2021 RIA 2021 - University of L'Aquila
Responsible: Francesco Leonetti.

2020 GNCS-Indam Project 2020
title of the project: "*Analisi numerica di sistemi evolutivi complessi*". Responsible: Dimitri Breda (University of Udine).

2020 RIA 2020 - University of L'Aquila
Responsible: Francesco Leonetti.

2019 RIA 2019 - University of L'Aquila
Responsible: Francesco Leonetti.

2018 RIA 2018 - University of L'Aquila
Responsible: Francesco Leonetti.

2017 GNCS-Indam Project 2017
title of the project: "*Analisi e sviluppo di metodologie numeriche per certi tipi non classici di sistemi dinamici*". Responsible: Stefano Maset (University of Trieste).

2016 Project FARB - University of Salerno 2016
title of the project: "*Modellistica numerica per problemi differenziali e integrali di evoluzione*". Responsible: Beatrice Paternoster.

2014 **Project FARB - University of Salerno 2014**
title of the project: "*Trattamento numerico di problemi differenziali di evoluzione*".
Responsible: Beatrice Paternoster.

2012 **Project FARB - University of Salerno 2012**
title of the project: "*Modellistica numerica per problemi differenziali e integrali*". Responsible: Beatrice Paternoster.

2010 **Project FARB - University of Salerno 2010**
title of the project: "*Problemi di evoluzione: metodi numerici e algoritmi*". Responsible: Beatrice Paternoster.

2008 **Project FARB - University of Salerno 2008**
title of the project: "*Metodi numerici e software matematico per problemi di evoluzione*". Responsible: Beatrice Paternoster.

2006 **Project FARB - University of Salerno 2006**
title of the project: "*Metodi numerici efficienti per problemi differenziali e integrali*". Responsible: Beatrice Paternoster.

Visiting periods in Italy and abroad

October 2019 **Fundação "Getulio Vargas", Escola de Matematica Aplicada**
Rio de Janeiro (Brasile), scientific collaboration with Hugo de La Cruz.
Length of the visit: 2 weeks.

May 2017 **Arizona State University, School of Math. and Statistical Sciences**
Tempe (USA), scientific collaboration with Zdzislaw Jackiewicz.
Length of the visit: 2 weeks.

February, March, **MOX Laboratory, Politecnico di Milano**
July 2016 scientific collaboration with Anna Scotti.
Length of the visit complessiva: 3 weeks.

November 2014– **Georgia Institute of Technology, School of Mathematics**
March 2015 Atlanta (USA), Fulbright Scholar, scientific collaboration with Luca Dieci.
Length of the visit: 5 months.

March–April 2014 **Johannes Kepler Universitat Linz, Institut fur Stochastic**
(Linz, Austria), scientific collaboration with Evelyn Buckwar.
Length of the visit: 1 month.

April–May 2013 **Université de Genève, Section de mathématiques**
(Ginevra, Switzerland), scientific collaboration with Ernst Hairer.
Length of the visit: 2 months.

January 2013 **University of Auckland, Department of Mathematics**
(Auckland, New Zealand), scientific collaboration with J.C. Butcher.
Length of the visit: 1 month.

October– **University of Auckland, Department of Mathematics**
December (Auckland, New Zealand), scientific collaboration with J.C. Butcher.
2010 Length of the visit: 2 months.

March 2008– **Arizona State University, School of Math. and Statistical Sciences**
March 2009 Tempe (USA), scientific collaboration with Zdzislaw Jackiewicz.
Length of the visit: 1 year.

Principal research topics

- Structure-preserving numerical integration of deterministic and stochastic evolutionary problems (linear and non-linear oscillators; Hamiltonian problems; dissipative problems).
- Linear and nonlinear stability of deterministic and stochastic numerical methods.
- Adapted numerical methods for partial differential equations.
- Numerical integration of deterministic and stochastic problems with memory (Volterra integral equations, fractional differential equations).
- Numerical collocation techniques for differential problems.
- Exponential/trigonometrical numerical schemes for oscillatory problems.
- Numerical schemes for stiff problems free from order reduction.
- Numerical treatment of chemical oscillators.
- Numerical modeling of fake news diffusion.

Publications

Monographs

1. Raffaele D'Ambrosio, *Numerical approximation of differential problems*, Springer, Unitext Series (in preparation).

Journal papers (peer reviewed)

2021

97. Evelyn Buckwar, Raffaele D'Ambrosio, *Exponential mean-square stability properties of stochastic linear multistep methods*, Advances in Computational Mathematics 47, article number 55 (2021).

96. Raffaele D'Ambrosio, Giuseppe Giordano, Serena Mottola, Beatrice Paternoster, *Stiffness Analysis to Predict the Spread Out of Fake Information*, Future Internet 13(9), article number 222 (2021).

95. Raffaele D'Ambrosio, Carmela Scalone, *Filon quadrature for stochastic oscillators driven by time-varying forces*, Applied Numerical Mathematics 169, 21–31 (2021).

94. Marcello Antonio Budroni, Giovanni Pagano, Dajana Conte, Beatrice Paternoster, Raffaele D'Ambrosio, Sandra Ristori, Ali Abou-Hassan, Federico Rossi, *Synchronization scenarios induced by delayed communication in arrays of diffusively coupled autonomous chemical oscillators*, Physical Chemistry Chemical Physics 23(32), 17606–17615 (2021).

93. Dajana Conte, Raffaele D'Ambrosio, Maria Pia D'Arienzo, Beatrice Paternoster, *Multivalue mixed collocation methods*, Applied Mathematics and Computation 409, article number 126346 (2021).

92. Raffaele D'Ambrosio, Giuseppe Giordano, Beatrice Paternoster, Andrea Ventola, *Perturbative analysis of stochastic Hamiltonian problems under time discretizations*, Applied Mathematics Letters 120, article number 107223 (2021).

91. Raffaele D'Ambrosio, Stefano Di Giovacchino, *Mean-square contractivity of stochastic ϑ-methods*, Communications in Nonlinear Science and Numerical Simulation 96, article number 105671 (2021).

90. Raffaele D'Ambrosio, Stefano Di Giovacchino, *Nonlinear stability issues for stochastic Runge-Kutta methods*, Communications in Nonlinear Science and Numerical Simulation 94, article number 105549 (2021).

89. Raffaele D'Ambrosio, Carmela Scalone, *On the numerical structure preservation of nonlinear damped stochastic oscillators*, Numerical Algorithms 86(3), 933–952 (2021).

88. Dajana Conte, Raffaele D'Ambrosio, Beatrice, Paternoster, *Improved ϑ-methods for stochastic Volterra integral equations*, Communications in Nonlinear Science and Numerical Simulation 93, article number 105528 (2021).

87. Raffaele D'Ambrosio, Beatrice Paternoster, *Multivalue collocation methods free from order reduction*, Journal of Computational and Applied Mathematics 387, article number 112515 (2021).

86. Raffaele D'Ambrosio, Carmela Scalone, *Two-step Runge-Kutta methods for stochastic differential equations*, Applied Mathematics and Computation 403, article number 125930 (2021).

85. Raffaele D'Ambrosio, Martina Moccaldi, Beatrice Paternoster, *Adapted numerical modeling for advection-reaction-diffusion problems on a bidimensional spatial domain*, International Journal of Mathematics and Computer Science 16(4), 1803–1829 (2021).

2020

84. Chuchu Chen, David Cohen, Raffaele D'Ambrosio, Annika Lang, *Drift-preserving numerical integrators for stochastic Hamiltonian systems*, Advances in Computational Mathematics 46, article number 27 (2020).

83. Vincenzo Citro, Raffaele D'Ambrosio, *Long-term analysis of stochastic θ-methods for damped stochastic oscillators*, Applied Numerical Mathematics 150, 18-26 (2020).

82. Vincenzo Citro, Raffaele D'Ambrosio, *Nearly conservative multivalue methods with extended bounded parasitism*, Applied Numerical Mathematics 152, 221–230 (2020).

81. Dajana Conte, Raffaele D'Ambrosio, Giovanni Pagano, Beatrice, Paternoster, *Jacobian-dependent vs Jacobian-free discretizations for nonlinear differential problems*, Computational and Applied Mathematics 39(3), 171 (2020).

80. Vincenzo Citro, Raffaele D'Ambrosio, Stefano Di Giovacchino, *A-stability preserving perturbation of Runge-Kutta methods for stochastic differential equations*, Applied Mathematics Letters 102, 106098 (2020).

79. D. Conte, R. D'Ambrosio, M.P. D'Arienzo, B. Paternoster, *One-point spectrum nordsieck almost collocation methods*, International Journal of Circuits, Systems and Signal Processing 14, 266–275 (2020).

2019

78. Armando Bazzani, Raffaele D'Ambrosio, Paolo Freguglia, Ezio Venturino, Maddalena Del Gallo, Claudia Ercole, Federica Matteucci, *A dynamical model for sympatric speciation in an ecological niche*, Theoretical Biology Forum 112(1–2), 13–20 (2019).

77. Dajana Conte, Raffaele D'Ambrosio, Martina Moccaldi, Beatrice Paternoster, *Adapted explicit two-step peer methods*, Journal of Numerical Mathematics 27(2), 69–83 (2019).

76. Angelamaria Cardone, Raffaele D'Ambrosio, Beatrice Paternoster, *A spectral method for stochastic fractional differential equations*, Applied Numerical Mathematics 139, 115–119 (2019).

75. Raffaele D'Ambrosio, Martina Moccaldi, Beatrice Paternoster, *Adapted IMEX numerical methods for reaction-diffusion problems*, International Journal of Circuits, Systems and Signal Processing 13, 507-515 (2019).

2018

75. Angelamaria Cardone, Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *Stability Issues for Selected Stochastic Evolutionary Problems: A Review*, Axioms 7(4), 91 (2018).

74. Angelamaria Cardone, Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *Collocation Methods for Volterra Integral and Integro-Differential Equations: A Review*, Axioms 7(3), 45 (2018).

73. Raffaele D'Ambrosio, Martina Moccaldi, Beatrice Paternoster, Federico Rossi, *Adapted numerical modelling of the Belousov–Zhabotinsky reaction*, Journal of Mathematical Chemistry, 56(10), 2867–2897 (2018).

72. Raffaele D'Ambrosio, Martina Moccaldi, Beatrice Paternoster, *Parameter estimation in IMEX-trigonometrically fitted methods for the numerical solution of reaction-diffusion problems*, Computer Physics Communications 226, 55–66 (2018).

71. Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *On the stability of ϑ-methods for stochastic Volterra integral equations*, Discrete and Continuous Dynamical Systems - Series B 23(7), 2695–2708 (2018).

70. Raffaele D'Ambrosio, Martina Moccaldi, Beatrice Paternoster, *Numerical preservation of long-term dynamics by stochastic two-step methods*, Discrete and Continuous Dynamical Systems - Series B 23(7), 2763–2773 (2018).

69. Angelamaria Cardone, Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *On Quadrature Formulas for Oscillatory Evolutionary Problems*, International Journal of Circuits, Systems and Signal Processing 12, 58-64 (2018).

2017

68. John Butcher, Raffaele D'Ambrosio, *Partitioned general linear methods for separable Hamiltonian problems*, Applied Numerical Mathematics 117, 69–86 (2017).

67. Kevin Burrage, Angelamaria Cardone, Raffaele D'Ambrosio, Beatrice Paternoster, *Numerical solution of time fractional diffusion systems*, Applied Numerical Mathematics 116, 82–94 (2017).

66. Angelamaria Cardone, Raffaele D'Ambrosio, Beatrice Paternoster, *Exponentially fitted IMEX methods for advection-diffusion problems*, Journal of Computational and Applied Mathematics 316, 100–108 (2017).

65. Angelamaria Cardone, Raffaele D'Ambrosio, Beatrice Paternoster, *High order exponentially fitted methods for Volterra integral equations with periodic solution*, Applied Numerical Mathematics 114C, 18–29 (2017).

64. Raffaele D'Ambrosio, Martina Moccaldi, Beatrice Paternoster, *Adapted numerical methods for advection-reaction-diffusion problems generating periodic wavefronts*, Computers and Mathematics with Applications 74(5), 1029–1042 (2017).

63. Angelamaria Cardone, Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *Stability issues in multivalue numerical methods for ordinary differential equations*, International Journal of Circuits, Systems and Signal Processing 11, 433-444 (2017).

62. Angelamaria Cardone, Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *Multivalue Approximation of Second Order Differential Problems: a Review*, International Journal of Circuits, Systems and Signal Processing 11, 319-327 (2017).

2016

61. Raffaele D'Ambrosio, Beatrice Paternoster, *Numerical solution of reaction-diffusion systems of lambda-omega type by trigonometrically fitted methods*, Journal of Computational and Applied Mathematics 294 C, 436-445 (2016).

60. Raffaele D'Ambrosio, Beatrice Paternoster, Carmen Scalone, *Numerical modeling of T-cell dynamics by reaction-diffusion problems*, International Journal of Mathematical Models and Methods in Applied Sciences 10, 321-331 (2016).

59. Angelamaria Cardone, Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *Modified collocation techniques for evolutionary problems*, International Journal of Mathematical Models and Methods in Applied Sciences 10, 266-273 (2016).

58. Raffaele D'Ambrosio, Giuseppe De Martino, Beatrice Paternoster, *General Nyström methods in Nordsieck form: error analysis*, Journal of Computational and Applied Mathematics 292, 694–702 (2016).

57. Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *GPU acceleration of waveform relaxation methods for large differential systems*, Numerical Algorithms, 71(2), 293–310 (2016).

56. Angelamaria Cardone, Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *Adapted numerical methods for oscillatory evolutionary problems*, International Journal of Mechanics 10, 266–273 (2016).

2015

55. Raffaele D'Ambrosio, Beatrice Paternoster, *A general framework for numerical methods solving second order differential problems*, Mathematics and Computers in Simulation 110(1), 113–124 (2015).

2014

54. Raffaele D'Ambrosio, Ernst Hairer, *Long-term stability of multi-value methods for ordinary differential equations*, Journal of Scientific Computing 60(3), 627–640 (2014).

53. Raffaele D'Ambrosio, Giuseppe De Martino, Beatrice Paternoster, *Numerical integration of Hamiltonian problems by G-symplectic methods*, Advances in Computational Mathematics 40(2), 553–575 (2014).

52. Raffaele D'Ambrosio, Beatrice Paternoster, *Exponentially fitted singly diagonally implicit Runge-Kutta methods*, Journal of Computational and Applied Mathematics 263, 277–287 (2014).

51. Raffaele D'Ambrosio, Giuseppe De Martino, Beatrice Paternoster, *Order conditions of general Nyström methods*, Numerical Algorithms, 65(3) 579–595 (2014).

50. Raffaele D'Ambrosio, Beatrice Paternoster, Giuseppe Santomauro, *Revised exponentially fitted Runge-Kutta-Nyström methods*, Applied Mathematics Letters 30, 56–60 (2014).

49. Raffaele D'Ambrosio, Beatrice Paternoster, *P-stable general Nyström methods for $y'' = f(x, y)$*, Journal of Computational and Applied Mathematics 262, 271–280 (2014).

48. Dajana Conte, Raffaele D'Ambrosio, Giuseppe Izzo, Zdzislaw Jackiewicz, *Natural Volterra Runge-Kutta methods*, Numerical Algorithms 65(3), 421–445 (2014).

47. Raffaele D'Ambrosio, Beatrice Paternoster, *Numerical solution of a diffusion problem by exponentially fitted finite difference methods*, Springer Plus 3(1), 425–431 (2014).

2013

46. Raffaele D'Ambrosio, Ernst Hairer, Christophe Zbinden, *G-symplecticity implies conjugate-symplecticity of the underlying one-step method*, BIT Numerical Mathematics 53, 867–872 (2013).

45. Dajana Conte, Raffaele D'Ambrosio, Zdzislaw Jackiewicz, Beatrice Paternoster, *Numerical search for algebrically stable two-step continuous Runge-Kutta methods*, Journal of Computational and Applied Mathematics 239, 304–321 (2013).

44. Michal Bras, Angelamaria Cardone, Raffaele D'Ambrosio, *Implementation of explicit Nordsieck methods with inherent quadratic stability*, Mathematical Modelling and Analysis 18(2), 289–307 (2013).

2012

43. Raffaele D'Ambrosio, Giuseppe De Martino, Beatrice Paternoster, *Construction of nearly conservative multivalue numerical methods for Hamiltonian problems*, Communications in Applied and Industrial Mathematics 3(2), e-412, doi:10.1685/journal.caim.412 (2012).

42. Raffaele D'Ambrosio, Elena Esposito, Beatrice Paternoster, *Parameter estimation in two-step hybrid methods for second order ordinary differential equations*, Journal of Mathematical Chemistry 50(1), 155–168 (2012).

41. Dajana Conte, Raffaele D'Ambrosio, Zdzislaw Jackiewicz, Beatrice Paternoster, *A practical approach for the derivation of algebraically stable two-step Runge-Kutta methods*, Mathematical Modelling and Analysis 17(1), 65–77 (2012).

40. Raffaele D'Ambrosio, Giuseppe Izzo, Zdzislaw Jackiewicz, *Search for highly stable two-step Runge-Kutta methods for ODEs*, Applied Numerical Mathematics 62(10), 1361–1379 (2012).

39. Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *Two-step diagonally-implicit collocation-based methods for Volterra Integral Equations*, Applied Numerical Mathematics 62(10), 1312–1324 (2012).

38. Raffaele D'Ambrosio, Beatrice Paternoster, *Two-step modified collocation methods with structured coefficients matrix for Ordinary Differential Equations*, Applied Numerical Mathematics 62(10), 1325–1334 (2012).

37. Raffaele D'Ambrosio, Elena Esposito, Beatrice Paternoster, *Exponentially fitted two-step Runge-Kutta methods: Construction and parameter selection*, Applied Mathematics and Computation 218(14), 7468–7480 (2012).

36. Raffaele D'Ambrosio, Elena Esposito, Beatrice Paternoster, *General linear methods for $y'' = f(y(t))$*, Numer. Algorithms 61(2), 331–349 (2012).

35. Raffaele D'Ambrosio, *On the G-symplecticity of two-step Runge-Kutta methods*, Communications in Applied and Industrial Mathematics 3(1), doi: 10.1685/journal.caim.000403 (2012).

34. Raffaele D'Ambrosio, Giuseppe Izzo, Zdzislaw Jackiewicz, *Perturbed MEBDF methods*, Computers & Mathematics with Applications 63(4), 851–861 (2012).

2011

33. Raffaele D'Ambrosio, *Metodi numerici altamente stabili per equazioni funzionali*, La Matematica nella Societá e nella Cultura, Serie I, Vol. IV, p. 43–46 (2011).

32. Raffaele D'Ambrosio, Liviu Gr. Ixaru, Beatrice Paternoster, *Construction of the EF-based Runge-Kutta methods revisited*, Computer Physics Communications 182, 322-329 (2011).

31. Raffaele D'Ambrosio, Elena Esposito, Beatrice Paternoster, *Exponentially fitted two-step hybrid for $y'' = f(x, y)$*, Journal of Computational and Applied Mathematics 235, 4888-4897 (2011).

30. Raffaele D'Ambrosio, Zdzislaw Jackiewicz, *Construction and implementation of highly stable two-step continuous methods for stiff differential systems*, Mathematics and Computers in Simulation 81(9), 1707–1728 (2011).

29. Raffaele D'Ambrosio, Maria Ferro, Beatrice Paternoster, *Trigonometrically fitted two-step hybrid methods for special second order ordinary differential equations*, Mathematics and Computers in Simulation 81, 1068–1084 (2011).

28. Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *Construction of diagonally implicit almost collocation methods for Volterra Integral Equations*, Rivista di Matematica della University of Parma 2, 125-146 (2011).

2010

27. Dajana Conte, Raffaele D'Ambrosio, Zdzislaw Jackiewicz, *Two-step Runge-Kutta methods with quadratic stability functions*, Journal of Scientific Computing 2, 191–218 (2010).

26. Raffaele D'Ambrosio, Maria Ferro, Zdzislaw Jackiewicz, Beatrice Paternoster, *Two step almost collocations methods for Ordinary Differential Equations*, Numerical Algorithms 53(2-3), 195–217 (2010).
25. Raffaele D'Ambrosio, Zdzislaw Jackiewicz, *Continuous Two-Step Runge-Kutta Methods for Ordinary Differential Equations*, Numerical Algorithms 54(2), 169–193 (2010).

2009

24. Raffaele D'Ambrosio, Maria Ferro, Beatrice Paternoster, *Two-Step Hybrid Collocation Methods for $y'' = f(x, y)$*, Applied Mathematics Letters 22(7), 1076–1080 (2009).

Conference proceedings and book chapters (peer reviewed)

2021

25. Raffaele D'Ambrosio, Stefano Di Giovacchino, *Optimal ϑ-Methods for Mean-Square Dissipative Stochastic Differential Equations*, in ICCSA 2021, O. Gervasi et al. (Eds.), Lecture Notes in Computer Science 12949, pp. 121–134, doi: 10.1007/978-3-030-86653-2_9, Springer Nature Switzerland (2021).
24. Raffaele D'Ambrosio, Carmela Scalone, *Asymptotic Quadrature Based Numerical Integration of Stochastic Damped Oscillators*, in ICCSA 2021, O. Gervasi et al. (Eds.), Lecture Notes in Computer Science 12950, pp. 622–629, doi: 10.1007/978-3-030-86960-1_45, Springer Nature Switzerland (2021).
23. Dajana Conte, Raffaele D'Ambrosio, Giuseppe Giordano, Beatrice Paternoster, *Continuous Extension of Euler-Maruyama Method for Stochastic Differential Equations*, in ICCSA 2021, O. Gervasi et al. (Eds.), Lecture Notes in Computer Science 12949, pp. 135–145, doi: 10.1007/978-3-030-86653-2_10, Springer Nature Switzerland (2021).

2020

22. Raffaele D'Ambrosio, Stefano Di Giovacchino, Donato Pera, *Parallel Numerical Solution of a 2D Chemotaxis-Stokes System on GPUs Technology*, in ICCS 2020, V. V. Krzhizhanovskaya et al. (Eds.), Lecture Notes in Computer Science 12137, doi: 10.1007/978-3-030-50371-0-5, Springer Nature Switzerland (2020).
21. Dajana Conte, Raffaele D'Ambrosio, Giuseppe Giordano, Liviu Gr. Ixaru, Beatrice Paternoster, *User-friendly expressions of the coefficients of some exponentially fitted methods*, in ICCSA 2020, Lecture Notes in Computer Science 12249, Chapter 4, pp. 1–16, doi: 10.1007/978-3-030-58799-4-4, Springer Nature Switzerland (2020).
20. Dajana Conte, Raffaele D'Ambrosio, Maria Pia D'Arienzo, Beatrice Paternoster, *Multivalue Almost Collocation Methods with Diagonal Coefficient Matrix*, in ICCSA 2020, Lecture Notes in Computer Science 12249, Chapter 10, pp. 1–14, 10.1007/978-3-030-58799-4-10, Springer Nature Switzerland (2020).
19. Dajana Conte, Raffaele D'Ambrosio, Maria Pia D'Arienzo, Beatrice Paternoster, *Singly diagonally implicit multivalue collocation methods*, in International Conference on Mathematics and Computers in Science and Engineering (MACISE 2020), doi: 10.1109/MACISE49704.2020.00018, IEEE Catalog Number: CFP20S31-ART, ISBN: 978-1-7281-6695-7 65–58 (2020).
18. Dajana Conte, Raffaele D'Ambrosio, Maria Pia D'Arienzo, Beatrice Paternoster, *Highly stable multivalue collocation methods*, Journal of Physics: Conference Series 1564, 012012 (2020).
17. Dajana Conte, Raffaele D'Ambrosio, Giuseppe Giordano, Beatrice Paternoster, *Regularized exponentially fitted methods for oscillatory problems*, Journal of Physics: Conference Series 1564, 012013 (2020).

2018

16. Raffaele D'Ambrosio, Martina Moccaldi, Federico Rossi, Beatrice Paternoster, *Stochastic Numerical Models of Oscillatory Phenomena*, in Artificial Life and Evolutionary Computation, Wivace 2017 Workshop, Venice, 19-21 September 2017, Springer, doi: 10.1007/978-3-319-78658-2_5 (2018).

2017

15. Raffaele D'Ambrosio, Martina Moccaldi, Federico Rossi, Beatrice Paternoster, *On the employ of time series in the numerical treatment of differential equations modelling oscillatory phenomena.* In: Advances in Artificial Life, Evolutionary Computation, and Systems Chemistry - 11th Workshop, WIVACE 2016, Fisciano, Italy, October 4–6, 2016, ed. by F. Rossi, S. Piotto, S. Concilio, Communications in Computer and Information science, Springer (2017).

14. Angelamaria Cardone, Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *On the numerical treatment of selected oscillatory evolutionary problems.* In: Numerical Analysis and Applied Mathematics, ed. by T. E. Simos, G. Psihoyios, Ch. Tsitouras, AIP Conference Proceedings 1836(1), 160004 (2017).

2016

13. Raffaele D'Ambrosio, *Some recent advances in the numerical solution of differential equations.* In: Numerical Analysis and Applied Mathematics, ed. by T. E. Simos, G. Psihoyios, Ch. Tsitouras, AIP Conference Proceedings 1738, 020002 (2016).

2015

12. Raffaele D'Ambrosio, *Multi-value numerical methods for Hamiltonian systems.* In: ENUMATH 2013, the 10th European Conference on Numerical Mathematics and Advanced Applications, Lausanne, August 2013, ed. by A. Abdulle, S. Deparis, D. Kressner, F. Nobile, M. Picasso, Lecture Notes in Computer Science and Engineering vol. 103, Springer (2015).

11. Raffaele D'Ambrosio, Giuseppe De Martino, Beatrice Paternoster, *A symmetric nearly preserving general linear method for Hamiltonian problems*, Dynamical Systems and Differential Equations, Proceedings of the 10th AIMS International Conference (Madrid, Spain) 330-339 (2015).

10. Raffaele D'Ambrosio, Martina Moccaldi, Beatrice Paternoster, *Highly stable multivalue numerical methods.* In: Numerical Analysis and Applied Mathematics, ed. by T. E. Simos, G. Psihoyios, Ch. Tsitouras, AIP Conference Proceedings 1648, 150005 (2015).

2012

9. Raffaele D'Ambrosio, Beatrice Paternoster, *Diagonally implicit exponentially fitted Runge-Kutta methods with equation dependent coefficients.* In: AIP Conference Proceedings, Numerical Analysis and Applied Mathematics, ed. by T. E. Simos, G. Psihoyios, Ch. Tsitouras. Vol. 1479, p. 1185-1188 (2012).

2010

8. Dajana Conte, Raffaele D'Ambrosio, Beatrice Paternoster, *Advances on collocation based numerical methods for Ordinary Differential Equations and Volterra Integral Equations.* In: Recent Advances in Computational and Applied Mathematics, ed. by Theodore E. Simos (Springer). p. 41-66 (2010).

7. Dajana Conte, Raffaele D'Ambrosio, Maria Ferro, Beatrice Paternoster, *Piecewise-polynomial approximants for solutions of Functional Equations.* In: I.Capuzzo Dolcetta, M.Transirico, A.Vitolo. Percorsi Incrociati (in ricordo di Vittorio Cafagna). p. 101-113, Rubbettino Editore (2010).

2009

6. Raffaele D'Ambrosio, Giuseppe Izzo, Zdzislaw Jackiewicz, *Highly Stable General Linear Methods for Differential Systems.* In: AIP Conference Proceedings, Numerical Analysis and Applied Mathematics, ed. by T. E. Simos, G. Psihoyios, Ch. Tsitouras. Vol. 1168(1), p. 21-24 (2009).

5. Dajana Conte, Raffaele D'Ambrosio, Maria Ferro, Beatrice Paternoster, *Practical construction of Two-Step Collocation Runge-Kutta methods for Ordinary Differential Equations.* In: Applied and Industrial Mathematics in Italy III, ed. by E. De Bernardis; R. Spigler; V. Valente. p. 278-288 (World Scientific Publishing), ISBN: 9789814280297 (2009).

4. Raffaele D'Ambrosio, Beatrice Paternoster, *Runge-Kutta-Nyström Stability for a Class of General Linear Methods for y"=f(x,y).* In: AIP Conference Proceedings, Numerical Analysis and Applied Mathematics, ed. by T. E. Simos, G. Psihoyios, Ch. Tsitouras. Vol. 1168 (1), p. 444-447 (2009).

3. Dajana Conte, Raffaele D'Ambrosio, Maria Ferro, Beatrice Paternoster, *Modified Collocation Techniques for Volterra Integral Equations.* In: Applied and Industrial Mathematics in Italy III, ed. by E. De Bernardis; R. Spigler; V. Valente. p. 268-277, World Scientific Publishing, ISBN: 9789814280297 (2009).

2008

2. Raffaele D'Ambrosio, Maria Ferro, Beatrice Paternoster, *Collocation-Based Two-Step Runge-Kutta Methods for Ordinary Differential Equations.* In: Computational Science and Its Applications ICCSA 2008. Lecture Notes in Computer Science, vol. 5073/2008, p. 736-751, Springer. ISBN: 9783540698401, ISSN: 1611-3349 (2008).

2007

1. Raffaele D'Ambrosio, Maria Ferro, Beatrice Paternoster, *A general family of two step collocation methods for Ordinary Differential Equations.* In: AIP Conference Proceedings, Numerical Analysis and Applied Mathematics, ed. by T. E. Simos, G. Psihoyios, Ch. Tsitouras. Vol. 936, p. 45-49 (2007).

Member of organizing committees

14. Co-organizer of the invited Minisymposium "Non-standard time integration of evolutionary problems" within Simai Conference 2020+21, Parma, 30 August–3 September 2021, with Dajana Conte (University of Salerno) and Marina Popolizio (Politecnico of Bari).

13. Member of the organizing committee of the series of online seminars NEPA2020 "Numerics for evolutive problems and applications", December 2020–March 2021, with Dajana Conte (University of Salerno), Hugo de la Cruz (Fundação Getulio Vargas, Rio de Janeiro), Beatrice Paternoster (University of Salerno), Helmut Podhaisky (Martin-Luther-Universität Halle-Wittenberg).

12. Co-organizer of the invited Minisymposium "Numerical approximation of stochastic problems" within the international conference SciCADE 2019 - International Conference on Scientific Computation and Differential Equations, Reykjavík, 26–30 July 2021, with Hugo de la Cruz (Fundação Getulio Vargas, Rio de Janeiro). The event has been postponed to 2022, due to COVID-19 emergency.

11. Member of the organizing committee of the Summer School "Numerical approximation of stochastic differential equations" (Speakers: Evelyn Buckwar, David Cohen, Desmond Higham), University of Salerno, 14–17 July 2020, with Dajana Conte and Beatrice Paternoster (University of Salerno). The event has been co-granted by the European Mathematical Society. The event has been postponed, due to COVID-19 emergency.

10. Member of the organizing committee of the Minisymposium "Numerical Advances in Differential Equations" within the international conference FAATNA2020 - Functional Analysis, Approximation Theory and Numerical Analysis, Matera, 7–10 July 2020, with Lidia Aceto (University of Pisa) and Zdzislaw Jackiewicz (Arizona State University). The event has been postponed to 2022, due to COVID-19 emergency.

9. Organizer of the Workshop STRUCTAPP2020 "A two-day workshop on structure-preserving approximation of evolutive problems and applications" 23–24 January 2020, University of L'Aquila.

8. Co-organizer of the Minisymposium "Numerical approximation of stochastic sys- tems" within the international conference SciCADE 2019 - International Conference on Scientific Computation and Differential Equations, Innsbruck, 22–26 July 2019, with Hugo de la Cruz (Fundação Getulio Vargas, Rio de Janeiro).

7. Co-organizer of the Minisymposium "Numerical approximation of stochastic prob- lems" within the internal conference ICIAM 2019 - International Conference on Industrial and Applied Mathematics, Valencia, 15–19 July 2019, with Hugo de la Cruz (Fundação Getulio Vargas, Rio de Janeiro).

6. Member of the organizing committee of the international conference HA-LU 2019 honoring Ernst Hairer for his 70th birthday and Christian Lubich for his 60th birthday, L'Aquila, 17–21 June 2019, with Nicola Guglielmi (Gran Sasso Science Institute, L'Aquila), Maria Lopez-Fernandez ("Sapienza" University of Rome), Pierangelo Marcati (Gran Sasso Science Institute, L'Aquila).

5. Co-organizer of the Minisymposium "Recent advances in numerical modeling for differential problems" within the international conference UMI-SIMAI-PTM Math- ematical Meeting 2018, Wroclaw, 17–20 September 2018, with Zbigniew Bar- toszewski (Gdansk University of Technology).

4. Co-organizer of the Minisymposium "Non-standard time integration of evolution- ary problems" within Simai Conference 2018, Rome, 2–6 July 2018, with Maria Lopez-Fernandez ("Sapienza" University of Rome).

3. Co-organizer of the Minisymposium "Numerical integration of evolutionary prob- lems" within the international conference SciCADE 2017 - International Confer- ence on Scientific Computation and Differential Equations, Bath, 11–15 September 2017, with Juan Ignacio Montijano (University of Zaragoza) and Luis Randez (University of Zaragoza).

2. Co-organizer of the special session "Integradores temporales de ecuaciones diferen- ciales" nell'ambito del Congreso Bienal de la Real Sociedad Matematica Espanola, Zaragoza, 30 January – 3 February 2017, with Inmaculada Higueras (University of Navarra) and Severiano Gonzalez-Pinto (University of La Laguna).

1. Co-organizer of the workshop NUMEP2015 - Numerical modeling of evolution- ary problems: perspectives and applications, University of Salerno, 26-27 October 2015.

Scientific talks

Invited conference talks

2021
- R. D'Ambrosio, *Principles of Stochastic Geometric Numerical Integrations: Dissipative Problems and Stochastic Oscillators*, invited plenary talk at ICNAAM 2021 - 19th International Conference of Numerical Analysis and Applied Mathematics, Rhodes, 20–26 September 2021. Due to COVID-19 emergency has taken place in hybrid form.
- Invited plenary speaker for the conference SDIDE2020, 6th Workshop on Stability and Discretization Issues in Differential Equations, Budapest, 7–11 June 2021. The event has been postponed to 2022, due to COVID-19 emergency.
- R. D'Ambrosio, *Nonlinear stability analysis of stochastic multistep and Runge-Kutta methods*, SCICADE 2021, Invited Symposium MS-08 "Numerical methods for stochastic (partial) differential equations" David Cohen, Annika Lang and Gilles Vilmart, Reykjavík (Iceland), 20–26 July 2021. The event has been postponed to 2022, due to COVID-19 emergency.

2020
- Invited plenary speaker for the conference SDIDE2020, 6th Workshop on Stability and Discretization Issues in Differential Equations, Budapest, 8–12 June 2020. The event has been postponed to 2021 due to the Covid-19 emergency.
- Invited plenary speaker for the conference ICNAAM 2020 - 18th International Conference of Numerical Analysis e Applied Mathematics, Symposium "13th Symposium on Recent Trends in the Numerical Solution of Differential Equations", Rhodes, 17–23 September 2020. The event in presence has been postponed to 2021 due to the Covid-19 emergency. Within the online event, the undersigned has delivered the talk "*Stiffness ratio and the diffusion of fake news*" for 13th Symposium on Recent Trends in the Numerical Solution of Differential Equations, organized by Luigi Brugnano and Ewa Weinmuller.
- R. D'Ambrosio, *Principles of Stochastic Geometric Numerical Integration*, International Webinar on Applied Mathematics and Modelling, 24 September 2020, invited by Attique Ur-Rehman.
- R. D'Ambrosio, *Decisione e incertezze: la matematica numerica che non sai di usare*, Matematica e Scienze nei Licei, Salerno, 5–6 March 2020, invited by the Scientific Committee Raffaele Cerulli (University of Salerno), Roberto Natalini (CNR - Istituto per le Applicazioni del Calcolo), Beatrice Paternoster (University of Salerno), Francesco Saverio Tortoriello (University of Salerno). The event has been postponed to 2021 due to the Covid-19 emergency.

2019
- R. D' Ambrosio, *A journey through deterministic and stochastic structure-preserving numerical schemes*, GNIDE 2019 - Geometric Numerical Integration of Differential Equations, Beijing (China), 9–13 September 2019. I was unable to attend the conference, so my talk was given by my co-author David Cohen in my place.
- E. Buckwar, R. D'Ambrosio, *Stabilità non lineare di metodi multistep stocastici*, Congresso UMI 2019, Sessione S-10 "Sistemi dinamici e metodi numerici per le equazioni differenziali", invited by N. Guglielmi and L. Lopez, Pavia, 2–7 September 2019.

- Invited talks at ICIAM2019 Conference, Symposium MS-06 "Efficient time-stepping methods for differential problems with special features" organized by D. Hernandez Abreu, D. Conte, Valencia (Spain), 15–19 July 2019:
  - R. D'Ambrosio, Chuchu Chen, David Cohen, Annika Lang, Beatrice Paternoster, *Long-term analysis of time discretizations for stochastic Hamiltonian problems*;
  - R. D'Ambrosio, B. Paternoster, *Adapted discretization of reaction-diffusion problems generating periodic wavefronts*.
- R. D'Ambrosio, *Adapted discretization of partial differential equations generating periodic wavefronts*. Plenary talk at the conference Efficient high-order time discretization methods for PDEs, Anacapri, 8–10 May 2019.
- R. D'Ambrosio, *A journey through structure-preserving discetization*. Comunicazione plenaria al convegno ICRAAM 2019 - International Conference on Recent Advances in Applied Mathematics, Lahore (Pakistan), 20–22 February 2019.

2018
- R. D'Ambrosio, *Hidden structures of stochastic numerical methods*. Comunicazione plenaria a "Calcolo Scientifico e Modelli Matematici: alla Ricerca delle Cose Nascoste attraverso le Cose Manifeste 2.0", Como, 16–18 May 2018.
- K. Burrage, A. Cardone, R. D'Ambrosio, B. Paternoster, *A spectral method for fractional differential equations*, XIV SIMAI Conference, Symposium MS-06 "Function Approximation and Functional Equations: Theory, Numerical Methods and Applications" organized by D. Conte, A. De Rossi, G. Milovanovich, D. Occorsio, Rome, 2–6 July 2018.

2017
- R. D'Ambrosio, M. Moccaldi, B. Paternoster, *Invariant preserving numerical approximation of stochastic differential equations*. RO-LCG 2017 Grid, Cloud and High-Performance Computing in Science, Symposium "Numerical analysis and applications" organized by Liviu Gr. Ixaru, Sinaia, 26–28 October 2017.
- R. D'Ambrosio, M. Moccaldi, B. Paternoster, *Adapted numerical methods for partial differential equations generating periodic wavefronts*, RO-LCG 2017 Grid, Cloud and High-Performance Computing in Science, Symposium "Numerical analysis and applications" organized by Liviu Gr. Ixaru, Sinaia, 26–28 October 2017.
- R. D'Ambrosio, L. Dieci, F. Difonzo, *An IVP solver for systems with discontinuous right-hand side, with sliding motion on co-dimension 2 surfaces and approximation of periodic orbits*. SCICADE 2017 - Symposium MS-31 "Dynamical Systems with discontinuities" organized by C. Elia and L. Lopez, Bath, 11–15 September 2017.
- R. D'Ambrosio, *Preserving structures of stochastic differential equations along numerical solutions*. Congreso Bienal de la Real Sociedad Matematica Espanola, Sessione speciale S15 - Integradores temporales de ecuaciones diferenciales, Zaragoza (Spain), 30 January–3 February 2017.

2016
- R. D'Ambrosio, *On the numerical treatment of selected oscillatory evolutionary problems*. ICNAAM 2016 - 16th International Conference of Numerical Analysis e Applied Mathematics, Symposium "Nineth Symposium on Recent Trends in the Numerical Solution of Differential Equations" organized by L. Brugnano and E. Weinmuller, Rhodes (Greece), 19–25 September 2016.
- A. Agosti, R. D'Ambrosio, L. Formaggia, B. Giovanardi, A. Scotti, *Numerical treatment of reaction-diffusion problems with discontinuous forcing terms*. XIII SIMAI Conference, Symposium MS-27 "Dynamical Systems with discontinuities: theory, numerical methods and applications" organized by L. Lopez and S. Maset, Milano, 13–16 September 2016.

- R. D'Ambrosio, <u>M. Moccaldi</u>, B. Paternoster, *On the employ of time series in the numerical treatment of differential equations.* XIII SIMAI Conference, Symposium MS-12 "Numerical Methods and Algorithms for Data Analysis in Science and Engineering Applications" organized by S. Cuomo, A. Galletti and L. Marcellino, Milano, 13–16 September 2016.
- <u>R. D'Ambrosio</u>, *Structure-preserving numerical integration of evolutionary problems.* Plenary talk at the workshop SDIDE2016 - Stability and Discretization Issues in Differential Equations, Trieste, 21–24 June 2016.
- <u>R. D'Ambrosio</u>, *Recent advances in numerical modeling for differential problems.* Plenary talk at the workshop Soft Computing Days, Fisciano, 23–25 May 2016.

2015
- <u>R. D'Ambrosio</u>, *Some recent advances in the numerical solution of differential equations.* Plenary talk at ICNAAM 2015 - 13th International Conference of Numerical Analysis and Applied Mathematics, Rhodes (Greece), 22–28 September 2015.
- R. D'Ambrosio, <u>B. Paternoster</u>, *Numerical treatment of reaction-diffusion problems by trigonometrically fitted methods.* SCICADE 2015, Symposium MS01 "Time integration of partial differential equations" organized by A. Ostermann and M. Hochbruck, Potsdam (Germany), 14–18 September 2015.
- <u>R. D'Ambrosio</u>, Luca Dieci, Fabio Difonzo, *Numerical treatment of discontinuous dynamical systems generating periodic orbits.* SCICADE 2015, Symposium MS07 "Discontinuous dynamical systems: Theory and numerical methods" organized by L. Lopez and C. Elia, Potsdam (Germany), 14–18 September 2015.
- <u>R. D'Ambrosio</u>, Luca Dieci, Fabio Difonzo, *Sul trattamento numerico di sistemi dinamici regolari a tratti.* XX UMI Conference, Symposium S10 "Metodi numerici per le equazioni differenziali ordinarie" organized by A. Bellen, Siena, 7–12 September 2015.
- R. D'Ambrosio, <u>M. Moccaldi</u>, B. Paternoster, *Metodi numerici impliciti-espliciti adattati per problemi di reazione-diffusione semidiscretizzati.* XX UMI Conference, Symposium S10 "Metodi numerici per le equazioni differenziali ordinarie" organized by A. Bellen, Siena, 7–12 September 2015.
- <u>D. Conte</u>, R. D'Ambrosio, B. Paternoster, *Risoluzione numerica di sistemi di equazioni differenziali di grandi dimensioni su GPUs.* XX UMI Conference, Symposium S10 "Metodi numerici per le equazioni differenziali ordinarie" organized by A. Bellen, Siena, 7–12 September 2015.
- <u>R. D'Ambrosio</u>, *Structure-preserving numerical methods for evolutionary problems.* Plenary speaker at the Second Tbilisi-Salerno conference on Modeling in Mathematics, Tbilisi (Georgia), 15-18 March 2015.

2014
- <u>R. D'Ambrosio</u>, M. Moccaldi, B. Paternoster, *Highly stable multivalue numerical methods.* ICNAAM 2014 - 12th International Conference of Numerical Analysis and Applied Mathematics, Symposium "Seventh Symposium on Recent Trends in the Numerical Solution of Differential Equations" organized by L. Brugnano and E. Weinmuller, Rhodes (Greece), 22–28 September 2014.
- <u>R. D'Ambrosio</u>, M. Moccaldi, B. Paternoster, *Long-term stability of multivalue methods for Hamiltonian problems.* ICNAAM 2014 - 12th International Conference of Numerical Analysis and Applied Mathematics, Symposium "Structure preserving integrators for Differential Equations" organized by E. Celledoni, R. Kozlov, T. Matsuo, Rhodes (Greece), 22–28 September 2014.

2012 ○ R. D'Ambrosio, B. Paternoster, *Diagonally implicit exponentially fitted Runge-Kutta methods with equation dependent coefficients*. ICNAAM 2012 - 10th International Conference of Numerical Analysis and Applied Mathematics, Symposium "Numerical Methods and Computational Procedures for Special Problems in Physics and Chemistry" organized by B. Paternoster, Kos (Greece), 19–25 September 2012.

○ R. D'Ambrosio, B. Paternoster, *P-stable Nordsieck General Linear Methods for second order Ordinary Differential Equations*. ICNAAM 2012 - 10th International Conference of Numerical Analysis and Applied Mathematics, Symposium "Fifth Symposium on Recent Trends in the Numerical Solution of Differential Equations" organized by L. Brugnano and E. Weinmuller, Kos (Greece), 19–25 September 2012.

○ R. D'Ambrosio, *Numerical modeling of some evolutionary problems in Immunology*. Plenary talk at the First Salerno-Tbilisi conference on Modeling in Mathematics, University of Salerno, 25–27 February 2012.

2010 ○ M. Bras, R. D'Ambrosio, G. Izzo, Z. Jackiewicz, *Highly stable General Linear Methods for ordinary differential equations*. Plenary talk at the 15th International Conference Mathematical Modelling and Analysis, Druskininkai (Lithuania), 26–29 May 2010.

2009 ○ R. D'Ambrosio, G. Izzo, Z. Jackiewicz, *Search for Highly Stable General Linear Methods for Ordinary Differential Equations*. Plenary talk at the 12th Seminar NUMDIFF on Numerical Solution of Differential and Differential-Algebraic Equations, Halle (Germany), 14–18 September 2009.

○ R. D'Ambrosio, G. Izzo, Z. Jackiewicz, *Highly Stable General Linear Methods for Differential Systems*. Plenary talk at ICNAAM 2009 - 7th International Conference of Numerical Analysis and Applied Mathematics, Rethymno (Crete) 18–22 September 2009.

2008 ○ R. D'Ambrosio, M. Ferro, Z. Jackiewicz, B. Paternoster, *Almost two-step collocation methods for ordinary differential equations*. Plenary talk at GLADE Conference 2008, Auckland (New Zealand), 14–18 July 2008.

Seminars in Italy and abroad

5/10/2021 **Université de Genève, Section de Mathématiques**
"Numerical conservation issues for stochastic differential equations"
invited by Gilles Vilmart.

6/7/2021 **"Federico II" University of Naples, SNAP - Seminar Series on Numerics and APplications (online)**
"Principles of stochastic geometric numerical integration"
invited by the organizers.

10/6/2021 **Ghana Numerical Analysis (online)**
"Principles of Deterministic and Stochastic Geometric Numerical Integration"
invited by Stephen Moore.

3/05/2021 **University of Udine, CDLab (online)**
"Principles of stochastic geometric numerical integration"
invited by Dimitri Breda, online event "Italy meets Switzerland @CDLab: dynamical systems, stochastic differential equations and applications".

17/11/2020 **Universiteit Twente, Paesi Bassi (online)**
"Structure-preserving numerics for stochastic Hamiltonian problems"
invited by Paolo Cifani.

4/11/2020 **Gran Sasso Science Institute (online)**
"Structure-preserving numerics for stochastic differential equations"
invited by Nicola Guglielmi e Francesco Tudisco.

3/09/2020 **University of Udine, CDLab (online)**
"Geometric numerical integration of stochastic differential problems"
invited by Dimitri Breda e Rossana Vermiglio.

5/12/2017 **"Sapienza" University of Rome, Department of Mathematics**
"Recent advances in structure-preserving numerical integration of differential problems: deterministic and stochastic aspects"
invited by Maria Lopez Fernandez.

11/5/2017 **Arizona State University, School of Math. and Statistical Sciences**
"Preserving structures of stochastic differential equations along numerical solutions"
invited by Zdzislaw Jackiewicz.

17/12/2015 **Politecnico di Milano, Department of Mathematics**
"Structure-preserving numerical integration of evolutionary problems"
invited by Luca Formaggia.

26/1/2015 **Georgia Institute of Technology, School of Mathematics**
"Nonlinear stability issues for the numerical solution of evolutionary problems"
invited by Luca Dieci.

1/12/2014 **Georgia Institute of Technology, School of Mathematics**
"Structure-preserving numerical integration of ordinary and partial differential equations"
invited by Luca Dieci.

8/10/2014 **Maxwell Institute, Edimburgo (UK)**
"Structure preserving numerical methods for differential equations"
invited by Heiko Gimperlin, nell'ambito della Graduate School on Evolution Equations.

9/4/2013 **Université de Genève, Section de Mathématiques**
"Nearly conservative general linear methods for Hamiltonian problems"
invited by Ernst Hairer.

25/1/2013 **University of Auckland, Department of Mathematics**
"Partitioned general linear methods for separable Hamiltonian problems"
invited by John Butcher.

9/11/2010 **University of Auckland, Department of Mathematics**
"Time-reversal symmetry of partitioned General Linear Methods"
invited by John Butcher.

14/2/2011 **University of Naples "Federico II", Department of Mathematics and Applications**
"Proprietá conservative dei Metodi Generali Lineari"
invited by Elvira Russo.

2/11/2010 **University of Auckland, Department of Mathematics**
"G-symplectic General Linear Methods for separable Hamiltonian problems"
invited by John Butcher.

4/11/2008 **Arizona State University, School of Math. and Statistical Sciences**
"Continuous two-step Runge-Kutta methods for Ordinary Differential Equations"
invited by Zdzislaw Jackiewicz.

Contributed talks

In joint talks, the speaker has been underlined.

2021 ○ Talks at ICCSA 2021, The 21st International Conference on Computational Science and its Applications (Cagliari e online), 13–16 Settembre 2021:
  - Raffaele D'Ambrosio, <u>Stefano Di Giovacchino</u>, Optimal ϑ-Methods for Mean-Square Dissipative Stochastic Differential Equations;
  - Raffaele D'Ambrosio, <u>Carmela Scalone</u>, Asymptotic Quadrature Based Numerical Integration of Stochastic Damped Oscillators;
  - Dajana Conte, Raffaele D'Ambrosio, <u>Giuseppe Giordano</u>, Beatrice Paternoster, Continuous Extension of Euler-Maruyama Method for Stochastic Differential Equations.

○ Talks at SIMAI 2020+2021 (Parma), 30 agosto – 3 settembre 2021, all within the minisymposium "Non-standard time integration of evolutionary problems" organized with Dajana Conte (University of Salerno) and Marina Popolizio (Politecnico of Bari):
  - <u>C. Scalone</u>, R. D'Ambrosio, N. Guglielmi, On the stability of linear stochastic differential equations with non-normal drift;
  - R. D'Ambrosio, <u>S. Di Giovacchino</u>, Nonlinear stability analysis of stochastic time integrators;
  - <u>B. Paternoster</u>, R. D'Ambrosio, G. Giordano, S. Mottola, Stiffness, order reduction and fake news:multivalue numerical modeling and applications;
  - <u>G. Giordano</u>, Raffaele D'Ambrosio, Beatrice Paternoster, On the perturbative analysis of the time-discretization for stochastic Hamiltonian problems;
  - <u>G. Pagano</u>, A. Abou-Hassan, M.A. Budroni, D. Conte, R. D'Ambrosio, B. Paternoster, Federico Rossi, Sandra Ristori, Synchronization scenarios due to the insertion of time delay in a communication ODEs model for chemical oscillators.

○ Talks at YIC 2021 - VI ECCOMAS Young Investigators Conference, (online), 7–9 Luglio 2021, all within the minisymposium "Recent advances in time numerical integration of evolutive problems" organized by Stefano Di Giovacchino (University of L'Aquila), Giuseppe Giordano, Leila Moradi, Giovanni Pagano (University of Salerno) e Carmela Scalone (University of L'Aquila):
  - Raffaele D'Ambrosio, <u>Stefano Di Giovacchino</u>, Mean-square contractivity of nonlinear stochastic differential equations under time discretizations;
  - Raffaele D'Ambrosio, <u>Carmela Scalone</u>, On the numerical solution of stochastic oscillators driven by time-varying and random forces;
  - Raffaele D'Ambrosio, <u>Giuseppe Giordano</u>, Beatrice Paternoster, On the numerical discetization of stochastic Hamiltonian problems with additive noise.

○ Talks at ECMI 2021 - European Consortium for Mathematics in Industry (online), 13–15 April 2021:
  - R. D'Ambrosio, <u>C. Scalone</u>, Numerical Dynamics of Stochastic Oscillators;
  - R. D'Ambrosio, <u>S. Di Giovacchino</u>, Mean-Square Contractivity Preserving Stochastic discretization;

○ Talks at ECCOMAS Congress 2020 - Virtual Congress, 11–15 January 2021, Symposium "Advances in numerical methods for linear and non-linear dynamics and wave propagation", organized by Alexander Idesman, Hauke Gravenkamp and Elena Atroshchenko;
  - M. A. Budroni, D. Conte, R. D'Ambrosio, <u>G. Pagano</u>, B. Paternoster, F. Rossi, *A Model For Diffusively Coupled Self-Oscillating Droplets With Delay*;
  - D. Conte, R. D'Ambrosio, M. P. D'Arienzo, <u>G. Giordano</u>, B. Paternoster, *Adapted Numerical Modeling for Evolutionary Problems*;
  - R. D'Ambrosio, <u>C. Scalone</u>, *Long-term conservation properties of stochastic θ-methods for nonlinear stochastic oscillators*;

- R. D'Ambrosio, <u>Di Giovacchino</u>, *Nonlinear Stability Analysis for Selected Stochastic Numerical Methods.*

2020
- Talks at ADENA 2020 - International Conference on Advances in Differential Equations and Numerical Analysis (online), 12–15 October 2020, Symposium "Young Researchers in Numerics for Evolutionary Problems", organized by Stefano Di Giovacchino and Carmela Scalone:
  - D. Conte, R. D'Ambrosio, <u>M.P. D'Arienzo</u>, B. Paternoster, *Highly Stable Multivalue Almost Collocation Methods with Structured Coefficient Matrix*;
  - R. D'Ambrosio, <u>S. Di Giovacchino</u>, Nonlinear Stability Issues in Stochastic Discretizations;
  - R. D'Ambrosio, <u>G. Giordano</u>, B. Paternoster, *Perturbative Analysis of the Discretization to Stochastic Hamiltonian Problems*;
  - R. D'Ambrosio, <u>C. Scalone</u>, Numerical Preservation Issues for Nonlinear Stochastic Oscillators.
- Talks at ICNAAM 2020 - 18th International Conference of Numerical Analysis e Applied Mathematics, Symposium "13th Symposium on Recent Trends in the Numerical Solution of Differential Equations" organized by L. Brugnano and E. Weinmuller, Rhodes (Greece), held online due to Covid-19 emergency, 17–23 September 2020:
  - D. Conte, R. D'Ambrosio, <u>M.P. D'Arienzo</u>, B. Paternoster, *Semi-implicit multivalue almost collocation methods*;
  - R. D'Ambrosio, <u>G. Giordano</u>, B. Paternoster, *Numerical conservation issues for stochastic Hamiltonian problems.*
- Talks at ICCSA2020 - The 20th International Conference on Computational Science and its Applications (online), 1–4 July 2020:
  - D. Conte, R. D'Ambrosio, <u>M.P. D'Arienzo</u>, B. Paternoster, *Multivalue almost collocation methods with diagonal coefficient matrix*;
  - D. Conte, R. D'Ambrosio, <u>G. Giordano</u>, L. Gr. Ixaru, B. Paternoster, *User-friendly expressions of the coefficients of some exponentially fitted methods.*
- Talks at 4th International Conference on Mathematical Models and Computational Techniques in Science and Engineering, Londra, 22–23 February 2020:
  - D. Conte, <u>R. D'Ambrosio</u>, M.P. D'Arienzo, B. Paternoster, *Highly Stable Multivalue Collocation Methods*;
  - D. Conte, <u>R. D'Ambrosio</u>, G. Giordano, B. Paternoster, *Regularized Exponentially Fitted Methods for Oscillatory Problems.*
- A. Bazzani, R. D'Ambrosio, <u>P. Freguglia</u>, E. Venturino, *A dynamical model for sympatric speciation in an ecological niche*, DSABNS2020-11th Conference on dynamical systems applied to Biology and natural sciences, Trento, 4–7 February 2020.
- Talks at STRUCTAPP2020 A two-day workshop on structure-preserving approximation of evolutive problems and applications, L'Aquila, 23–24 January 2020:
  - R. D'Ambrosio, <u>B. Paternoster</u>, *Multivalue collocation methods free from order reduction* (plenary talk);
  - D. Conte, R. D'Ambrosio, <u>M. D'Arienzo</u>, B. Paternoster, *Diagonally implicit multivalue collocation methods* (poster session);
  - D. Conte, R. D'Ambrosio, <u>G. Giordano</u>, L. Gr. Ixaru, B. Paternoster, *Exponential fitting: user-friendly reformulation* (poster session);
  - R. D'Ambrosio, <u>S. Di Giovacchino</u>, *Nonlinear stability analysis for stochastic θ-methods* (poster session);
  - R. D'Ambrosio, <u>A. El Fauti</u>, *A PDE-based parameter estimation for a trigonometric finite difference numerical scheme* (poster session).

○ D. Conte, R. D'Ambrosio, <u>M.P. D'Arienzo</u>, B. Paternoster, *Singly diagonally implicit multivalue collocation methods*, MACISE 2020 - International Conference on Mathematics and Computers in Science and Engineering, Madrid (Spain), 18–20 January 2020.

2019 ○ Talks at SCICADE 2019 International Conference on Scientific Computation And Differential Equations, Innsbruck (Austria), 22–26 July 2019:
- E. Buckwar, <u>R. D'Ambrosio</u>, *Nonlinear stability issues for stochastic multistep methods*, nell'ambito del Symposium MS-06 "Numerical approximation of stochastic systems" organized by Hugo de La Cruz and Raffaele D'Ambrosio;
- R. D'Ambrosio, <u>S. Di Giovacchino</u>, *Mean-square contractivity of stochastic θ-methods* (poster session).
○ R. D'Ambrosio, *Structure-preserving numerics for stochastic Hamiltonian problems*, NSIDE2019 - Workshop on numerical solution of integral and differential equations, Gdansk (Polonia), 17–19 July 2019.
○ Talks at ICIAM 2019 Conference, Symposium MS-06 'Numerical approximation of stochastic problems" organized by Hugo de La Cruz and Raffaele D'Ambrosio, Valencia (Spain), 15–19 July 2019:
- E. Buckwar, <u>R. D'Ambrosio</u>, *Nonlinear stability issues for stochastic multistep methods*;
- <u>A. Cardone</u>, R. D'Ambrosio, B. Paternoster, *A spectral method for fractional differential equations*;
- <u>D. Conte</u>, R. D'Ambrosio, B. Paternoster, *Stability analysis of theta-methods for stochastic Volterra integral equations*.

2018 ○ R. D'Ambrosio, B. Paternoster, <u>M. Moccaldi</u>, *Trigonometrically fitted-IMEX discretization of advection-reaction-diffusion problems*, XIV SIMAI Conference, Rome, 2–6 July 2018.
○ R. D'Ambrosio, *Structure-preserving stochastic numerical methods*, SDS2018 Workshop on structural dynamical systems: Computational Aspects, Capitolo - Monopoli (Bari), 12–15 June 2018.
○ R. D'Ambrosio, *Numerical conservation issues for stochastic Hamiltonian problems*, UMI-SIMAI-PTM Joint Conference, Symposium "Recent Advances in Numerical Modeling for Differential Problems" organized by Z. Bartoszewski and R. D'Ambrosio, Wroclaw (Polonia), 17–20 September 2018.
○ Talks at XIV SIMAI Conference, Symposium MS-04 "Non-standard time integration of evolutionary problems" organized by R. D'Ambrosio, M. Lopez-Fernandez, Rome, 2–6 July 2018:
- R. D'Ambrosio, <u>B. Paternoster</u>, M. Moccaldi, *Adapted time integration of partial differential equations generating periodic wavefronts*;
- R. D'Ambrosio, <u>A. Scotti</u>, *Numerical approximation of reaction-diffusion PDEs with discontinuous forcing term*.

2017 ○ Talks at SCICADE 2017 - Symposium MS-20 "Numerical treatment of oscillatory problems" organized by R. D'Ambrosio, J. Montijano e Luis Randez, Bath, 11–15 September 2017:
- R. D'Ambrosio, M. Moccaldi, <u>B. Paternoster</u>, *Adapted finite difference schemes for advection-reaction-diffusion problems generating periodic wavefronts*;
- R. D'Ambrosio, <u>M. Moccaldi</u>, B. Paternoster, *Preserving structures of stochastic differential equations along numerical solutions*.

- R. D'Ambrosio, M. Moccaldi, B. Paternoster, F. Rossi, *Stochastic numerical modeling of selected oscillatory phenomena.* WIVACE 2017 - XII Workshop on Artificial Life and Evolutionary Computation, Venice, 19-21 September 2017.

2016
- Talks at 9th NAI Workshop - Numerical Analysis of Evolution Equations, Innsbruck (Austria), 8-11 November 2016:
  - E. Buckwar, R. D'Ambrosio, M. Moccaldi, B. Paternoster, *Stability issues for stochastic multistep methods*;
  - R. D'Ambrosio, M. Moccaldi, B. Paternoster, *Adapted numerical integration of advection-reaction-diffusion problems generating periodic wavefronts.*
- Talks at AMCSE 2016 - International Conference Applied Mathematics, Computational Science and Systems Engineering, Rome, 5-7 November 2016:
  - R. D'Ambrosio, B. Paternoster, C. Scalone, *Numerical modeling of T-cell dynamics*;
  - A. Cardone, D. Conte, R. D'Ambrosio, B. Paternoster, *Modified Collocation Techniques for Evolutionary Problems.*
- R. D'Ambrosio, M. Moccaldi, B. Paternoster, F. Rossi, *On the employ of time series in the numerical treatment of differential equations modelling oscillatory phenomena*, WIVACE 2016 - Workshop on Artificial Life and Evolutionary Computation, Fisciano (Salerno), 4–7 October 2016.
- Talks at SDS2016 Workshop on structural dynamical systems: Computational Aspects, Capitolo - Monopoli (Bari), 14-17 June 2016:
  - R. D'Ambrosio, *Stability issues in the numerical solution of stochastic differential equations* (comunicazione orale);
  - D. Conte, R. D'Ambrosio, E. Di Rubbo, B. Paternoster, *On the stability of Euler-Maruyama and Milstein type methods for stochastic Volterra integral equations* (poster session);
  - R. D'Ambrosio, M. Moccaldi, B. Paternoster, *Adapted numerical methods for advection-reaction-diffusion problems generating periodic wavefronts* (poster session).
- A. Cardone, D. Conte, R. D'Ambrosio, B. Paternoster, *Adapted numerical methods for oscillatory evolutionary problems*, AMCME 2016 International Conference on Applied Mathematics and Computational Methods in Engineering, Riga (Lettonia), 28- 30 May 2016.

2015
- A. Cardone, R. D'Ambrosio, B. Paternoster, *High order exponentially fitted methods for periodic Volterra Integral Equations*, IWANASP 2015 - Fifth International Workshop on Analysis and Numerical Approximation of Singular Problems, Lagos (Portugal), 22-24 October 2015.
- K. Burrage, A. Cardone, R. D'Ambrosio, B. Paternoster, *Numerical solution of time-fractional reaction-diffusion systems*, SCICADE 2015 - International Conference on Scientific Computation And Differential Equations, Potsdam (Germany), 14-18 September 2015.
- A. Cardone, R. D'Ambrosio, B. Paternoster, *Trigonometrically fitted numerical methods for reaction-diffusion problems*, NUMDIFF14 - Numerical Solution of Differential and Differential-Algebraic Equations, Halle (Germany), 7-11 September 2015.
- Talks at NETNA2015 - New Trends in Numerical Analysis, Falerna (Italy), 18-21 15 June 2015.
  - R. D'Ambrosio, *Structure-preserving numerical methods for differential problems*;
  - R. D'Ambrosio, M. Moccaldi, B. Paternoster, *Numerical solution of partial differential equations by IMEX methods based on non-polynomial fitting.*

- Talks at the workshop NUMEP2015 - Numerical Modeling in Evolutionary Problems: perspectives and applications, Fisciano (Italy), 26–27 October 2015:
  - R. D'Ambrosio, *Some recent advances in the numerical solution of functional equations* (plenary talk);
  - E. Buckwar, R. D'Ambrosio, *Exponential mean-square stability of numerical methods for nonlinear stochastic differential equations* (poster session);
  - K. Burrage, A. Cardone, R. D'Ambrosio, B. Paternoster, *A mixed spectral method for time-fractional reaction-diffusion systems* (poster session);
  - R. D'Ambrosio, M. Moccaldi, B. Paternoster, *Implicit - explicit (IMEX) methods for reaction-diffusion systems with non-polynomial fitting* (poster session);
  - R. D'Ambrosio, B. Paternoster, C. Scalone, *Numerical solution of differential equations, modeling the evolution of some T-cells* (poster session).

2014
- R. D'Ambrosio, *Nearly preserving numerical methods for differential equations*, 8th Workshop SDS2012 Structural Dynamical System: Computational Aspects, Capitolo, Monopoli (Italy), 12-15 June 2014.
- R. D'Ambrosio, *Long-term structure-preserving numerical methods for Hamiltonian problems in Physics and Medicine*, SIMAI Biannual Congress, Taormina (Italy), 7-10 July 2014.
- R. D'Ambrosio, G. De Martino, B. Paternoster, *Nearly conservative multi-value numerical methods for Hamiltonian problems*, 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Madrid (Spain), 7–11 July 2014.

2013
- Talks at ANODE13 Auckland Numerical Ordinary Differential Equations in celebration of the 80th birthday of John C. Butcher, Auckland (New Zealand), 7–11 January 2013:
  - J. C. Butcher, R. D'Ambrosio, B. Paternoster, *Multivalue numerical methods for partitioned differential problems: from second order ODEs to separable Hamiltonians*;
  - D. Conte, R. D'Ambrosio, G. Izzo, Z. Jackiewicz, *Construction of highly stable Volterra Runge-Kutta methods*.
- R. D'Ambrosio, *Numerical solution of Hamiltonian systems by multivalue methods*, ENUMATH 2013 European Numerical Mathematics and Advanced Applications, Lausanne (Switzerland), 26–30 August 2013.
- Talks at SCICADE 2013 International Conference on Scientific Computation and Differential Equations, Valladolid (Spain), 16–20 September 2013:
  - R. D'Ambrosio, G. De Martino, B. Paternoster, *Numerical solution of Hamiltonian problems by G-symplectic integrators*;
  - R. D'Ambrosio, E. Hairer, *Long-term stability of multi-value methods for ordinary differential equations*.

2012
- Talks at 7th Workshop SDS2012 Structural Dynamical Systems: Computational Aspects, Capitolo, Monopoli (Bari), 12–15 June 2012:
  - J. C. Butcher, R. D'Ambrosio, *Nearly conservative multivalue methods for separable Hamiltonian problems*;
  - D. Conte, R. D'Ambrosio, B. Paternoster, Z. Jackiewicz, *Algebraically stable two-step Runge-Kutta and continuous methods for ordinary differential equations*.

- ○ Talks at SIMAI Biannual Congress, Torino, 25–28 June 2012:
  - − J. C. Butcher, <u>R. D'Ambrosio</u>, *Canonical properties of general linear methods for Hamiltonian problems.*
  - − R. D'Ambrosio, <u>B. Paternoster</u>, *Exponentially fitted methods for second order ordinary differential equations with parameter estimation.*
- ○ <u>R. D'Ambrosio</u>, B. Paternoster, *Exponentially fitted numerical methods for differential problems with equation dependent coefficients*, ICCAM 2012 - International Congress on Computational and Applied Mathematics, Gent (Belgio), 9–13 July 2012.
- ○ <u>R. D'Ambrosio</u>, B. Paternoster, *Highly stable General Linear Methods for second order Ordinary Differential Equations*, 13th Seminar NUMDIFF on Numerical Solution of Differential and DifferentialAlgebraic Equations, Halle (Germany), 10–14 September 2012.

2011
- ○ R. D'Ambrosio, *Metodi numerici algebricamente stabili e G-simplettici per il trattamento di problemi di evoluzione*, SIMAI "Prospettive di sviluppo della matematica applicata in Italia 2011", Rome, 8 April 2011.
- ○ R. D'Ambrosio, *Nonlinear stability and G-symplecticity of General Linear Methods*, CIME Course "Current challenges in stability issues for numerical differential equations", Cetraro (Italy), organized by L. Dieci e N. Guglielmi, 27 June – 2 July 2011.
- ○ D. Conte, <u>R. D'Ambrosio</u>, Z. Jackiewicz, B. Paternoster, *Algebraically stable two-step Runge-Kutta methods for Ordinary Differential Equations*, MMA2011 - 16th International Conference on Mathematical Modelling and Analysis, Sigulda (Latvia), 25–28 May 2011.
- ○ Talks at XIX UMI Conference, Bologna, 12–17 September 2011:
  - − R. D'Ambrosio, *Metodi Generali Lineari altamente stabili e conservativi per la risoluzione numerica di Equazioni Differenziali Ordinarie*;
  - − R. D'Ambrosio, <u>E. Esposito</u>, B. Paternoster, *Metodi Generali Lineari per Equazioni Differenziali Ordinarie del secondo ordine.*
- ○ Talks at SC2011 International Conference on Scientific Computing, S. Margherita di Pula (Italia), 10–14 October 2011:
  - − R. D'Ambrosio, E. Esposito, <u>B. Paternoster</u>, *General Linear Nyström methods*;
  - − <u>R. D'Ambrosio</u>, E. Esposito, B. Paternoster, *Stability analysis of General Linear Nyström methods.*

2010
- ○ Talks at BIT 50 - Trends in Numerical Computing, Lund (Svezia) 17–20 June 2010:
  - − <u>D. Conte</u>, R. D'Ambrosio, Z. Jackiewicz, B. Paternoster, *Algebraically stable two-step almost collocation methods for ordinary differential equations*;
  - − <u>R. D'Ambrosio</u>, E. Esposito, B. Paternoster, *General Linear Methods for Special Second Order ODEs.*

2009
- ○ Talks at 12th Seminar NUMDIFF on Numerical Solution of Differential and Differential-Algebraic Equations, Halle (Germany), 14–18 September 2009:
  - − <u>D. Conte</u>, R. D'Ambrosio, B. Paternoster, *Two-step diagonally-implicit collocation-based methods for Volterra Integral Equations*;
  - − <u>R. D'Ambrosio</u>, Z. Jackiewicz, *Highly stable two step collocation methods for stiff differential systems*;
  - − R. D'Ambrosio, <u>B. Paternoster</u>, *Two-step modified collocation methods with structured coefficient matrices for ordinary differential equations.*

- R. D'Ambrosio, B. Paternoster, *Runge-Kutta-Nyström stability for a class of General Linear Methods for $y'' = f(x, y)$*, ICNAAM 2009 - 7th International Conference of Numerical Analysis and Applied Mathematics, Rethymno, Creta, 18–22 September 2009.
- R. D'Ambrosio, E. Esposito, B. Paternoster, *Exponentially fitted two-step hybrid methods for $y'' = f(x, y)$*, ICCAM 2009 - 14th International Congress on Computational and Applied Mathematics, Antalya (Turchia), 29 September–2 October 2009.
- A. Cardone, D. Conte, R. D'Ambrosio, B. Paternoster, *Modified collocation-based numerical methods for Volterra Integral and Integro-differential Equations*, Equazioni integrali: recenti sviluppi numerici e nuove applicazioni, Parma, 29–30 October 2009.

2008
- R. D'Ambrosio, M. Ferro, B. Paternoster, *Two-step collocation methods for $y'' = f(x, y)$*, NAOF 2008 - Symposium on Numerical Approaches of Oscillatory Functions, Gent (Belgio), 16–18 January 2008.
- Talks at SDS 2008 - Structural Dynamical Systems: Computational Aspects Workshop, Capitolo, Monopoli, 17–20 June 2008:
  - R. D'Ambrosio, *Development and Implementation of Two-step Runge-Kutta Methods for Ordinary Differential Equations* (poster session);
  - R. D'Ambrosio, M. Ferro, B. Paternoster, *New classes of two step collocation methods for special second order ODEs* (comunicazione orale).
- R. D'Ambrosio, M. Ferro, B. Paternoster, *Collocation-based two step Runge-Kutta methods for Ordinary Differential Equations*, ICCSA 2008 - International Conference on Computational Science and Its Applications, Perugia, 30 June–3 July 2008.
- Talks at GLADE Conference and Workshop 2008, Auckland (New Zealand), 14–25 July 2008:
  - D. Conte, R. D'Ambrosio, Z. Jackiewicz, *Two-Step Runge-Kutta Methods with Quadratic Stability Functions*;
  - R. D'Ambrosio, Z. Jackiewicz, *A Special Class of Continuous Two-Step Runge-Kutta Methods for Ordinary Differential Equations*.
- D. Conte, R. D'Ambrosio, M. Ferro, B. Paternoster, *Modified Collocation Techniques for Ordinary Differential Equations and Volterra Integral Equations*, SIMAI 9th Congress, Rome, 15–19 September 2008.
- D. Conte, R. D'Ambrosio, Z. Jackiewicz, *Analysis and practical construction of Two-Step Runge-Kutta methods for Ordinary Differential Equations*, SIMAI 9th Congress, Rome, 15–19 September 2008.

2007
- R. D'Ambrosio, M. Ferro, Z. Jackiewicz, B. Paternoster, *A new class of two step continuous methods for Ordinary Differential Equations*, SciCADE 2007 - 11th International Conference on SCIentific Computation And Differential Equations, Saint-Malo (Francia), 9–13 July 2007.
- R. D'Ambrosio, M. Ferro, B. Paternoster, *A General Family of Two Step Collocation Methods for Ordinary Differential Equations*, ICNAAM 2007 - International Conference of Numerical Analysis and Applied Mathematics, Corfu (Greece), 16–20 September 2007.
- R. D'Ambrosio, M. Ferro, B. Paternoster, *Metodi generali di collocazione per Equazioni Differenziali Ordinarie*, XVIII Conferenza UMI, 24–29 September 2007.

Editorial activity

- Specialist Editor of Computer Physics Communications, Elsevier (since November 2015).
- Associate Editor of Applied Numerical Mathematics, Elsevier (since February 2016).
- Editor of Experimental Results, Cambridge University Press (since February 2019).
- Associate Editor of Opuscula Mathematica, AGH University of Science and Technology (Krakow, Poland; since November 2014).

Reviewer for Mathematical Reviews and referee of manuscript submitted to various journals, such as: SIAM Journal on Numerical Analysis (SIAM), SIAM Journal on Scientific Computing (SIAM), Numerische Mathematik (Springer), BIT Numerical Mathematics (Springer), Numerical Algorithms (Springer), Advances in difference equations (Springer), Calcolo (Springer), Applied Mathematics and Computation (Elsevier), Applied Numerical Mathematics (Elsevier), Journal of Computational and Applied Mathematics (Elsevier), Journal of Computational Physics (Elsevier), Computer Physics Communications (Elsevier), Computers & Mathematics with Applications (Elsevier), Applied Mathematics Letters (Elsevier), Mathematics and Computers in Simulation (Elsevier), Discrete and Continuous Dynamical System - B (Aims).

"Outstanding Contribution in Reviewing" for Applied Numerical Mathematics (Elsevier), August 2014.

Supervision of doctoral and post-doc students

- Advisor of Stefano Di Giovacchino (Ph.D. in Mathematics and Models, University of L'Aquila), XXXIV Cycle, since November 2018.
- Advisor of Alessandro Di Pasquale (Ph.D. in Mathematics and Models, University of L'Aquila), XXXV Cycle, from 1 November 2019 to 16 December 2020.
- Supervisor of the post-doc position of Carmela Scalone (University of L'Aquila), from 1 July 2019 to 30 June 2020.
- Supervisor of the post-doc position of Carmela Scalone (University of L'Aquila), from 1 July 2020 to 30 June 2021.
- Supervisor of the post-doc position of Carmela Scalone (University of L'Aquila), from 1 July 2021.
- Co-advisor of the Ph.D. thesis of Giuseppe De Martino "Multi-value numerical modeling for special differential problems", Ph.D. in Mathematics - XIII Cycle, University of Salerno (2015).
- Co-advisor of the Ph.D. thesis of Martina Moccaldi, Ph.D. in Mathematics, Physics and Applications, University of Salerno - "Luigi Vanvitelli" University of Campania (2018).

Service activity

- Vice-President of the Mathematical Engineering Teaching Cousil, University of L'Aquila, since 6 November 2018. From 25 January 2020 to 31 August 2020, the undersigned has been President pro-tempore, in place of the President on leave.
- Delegate of the Director of DISIM for seminars and cultural initiatives, from June 22, 2021 (DD 218/2021, prot. 2147, June 22, 2021).
- Member of the selection committee of MathMods students for the years 2018, 2019, 2020, University of L'Aquila.

- Scientific Responsible of the Mathematical Modeling Laboratory, University of L'Aquila, since February 13, 2019.
- Responsible of the Committee for the scheduling of the lectures in Mathematical Engineering, University of L'Aquila, from January 20, 2020 to June 11, 2021.
- Member of the Quality Assurance Group of the Mathematical Engineering Teaching Cousil, University of L'Aquila, since 6 November 2018.
- Member of the Teaching Programming Committee of the Mathematical Engineering Teaching Cousil, University of L'Aquila, since 10 April 2019.
- Member of the Organizing Committee of the seminar series "New Faculty Seminars @DISIM" since the A.Y. 2018–2019, DISIM-University of L'Aquila;
- Delegate to the outcoming orientation and the relationships with the industries of the Counsil of Didactic Area, Master Degree in Mathematical Engineering, University of L'Aquila, from November 6, 2018 to July 16, 2020.
- Member of the Board of the Ph.D. in "Mathematics and Applications", University of L'Aquila, since the XXXIV Cycle.
- Member of the following selection committees:
  - selection of a researcher at the University of L'Aquila - sector 01/A5 Numerical Analysis, ex art. 24, comma 3, letter a) of the Law 240/2010, nominated by D.R. n. 704/2018 - Prot. n. 28910, 29/06/2018;
  - selection of a researcher at the University of Basilicata - sector 01/A5 Numerical Analysis, ex art. 24, comma 3, letter a) of the Law 240/2010, nominated by D.R. 193/2019 - Rep. n. 185 of 16/05/2019;
  - selection of a researcher at the University of Udine - sector 01/A5 Numerical Analysis, ex art. 24, comma 3, letter a) of the Law 240/2010, nominated by D.R. 986/2019 - Prot. n. 0054935 of 12/12/2019;
  - selection of a researcher at the University of L'Aquila - sector 01/A5 Numerical Analysis, x art. 24, comma 3, letter b) of the Law 240/2010, nominated by D.R. n. 118/2020 - Prot. n. 9105 of 29/01/2020.
- Member of the Orientation Committee of the Degree in Mathematics, University of L'Aquila, since November 2017.
- Referent for the Department of Mathematics, University of di Salerno, for the program of quality evaluation VQR 2011–2014.
- Referent for the Department of Mathematics, University of di Salerno, for the catalogue of research products IRIS for the A.Y. 2016–2017.
- Member of the E-Learning Committee, Degree in Computer Science, University of Salerno, for the years 2015–2017.

Concerning the orientation activities, the undersigned declares what follows:

- Creator of the Contest "Crea il tuo meme matematico", Mathematics Teaching Counsil, University of L'Aquila, since 2017, for four editions.
- Orientation meeting at the Liceo D. Cotugno of L'Aquila, on February 8, 2021, for the presentation of the degree programs offered by DISIM.
- Plenary speaker within the Open Days Univaq (online, due to Covid-19 emergency), 5 May 2020, title of the talk "La Matematica dei Social Network".
- Partecipation to the event Salone dello Studente in Rome (Fiera Di Roma, 13 November 2018), as represenative of DISIM (University of L'Aquila) for the Mathematics area.
- Plenary speaker within the event Settimana della Cultura Scientifica e Tecnologica organized by the Liceo Scientifico "Vitruvio" of Avezzano, Castello Orsini, 13 March 2018, title of the "La Matematica che non sai di usare: da Twitter ad Amazon, da Shazam a Google".

- Orientation meeting at the Val Vibrata College Liceo Scientifico G. D'Annunzio, Corropoli, 31 January 2018, title of the talk: "Il mondo dei sistemi di raccomandazione: la matematica di Amazon, Facebook e Twitter".
- Seminar series for the "Comenius" project at the Liceo Scientifico "Rummo" of Benevento, on the following topics: "Zeri di polinomi con Sage e Python: metodi numerici e loro convergenza", "La matematica del web: autovalori e sistemi lineari per ricercare con Google", "Disegnare con le matrici: cosa si nasconde dietro il clic del mouse", A.Y. 2014–2015.
- Orientation meetings within the project "Numero Ergo Sum" of the Department of Mathematics, University of Salerno, at the Liceo Scientifico "Da Procida" of Salerno, A.Y. 2015–2016.
- Member of the organizing committee of the conference "Matematica e Statistica - PLS (Per Lasciare il Segno)", University of Salerno, 4 April 2012, within the "Piano Lauree Scientifiche - Progetto Matematica e Statistica".
- Member of the organizing committe of the Piano Lauree Scientifiche - Progetto "Matematica e Statistica" for A.Y. 2011–2012, Department of Mathematics, University of Salerno.
- Orientation meeting within the event "Collega-Menti", University of Salerno, October 2008.
- Orientation meeting within the project "Campus", University of Salerno, A.Y. 2007–2008.
- Orientation meeting within the project "Agasmi - Avvicinare i giovani alle Scienze Matematiche e Informatiche", University of Salerno, A.Y. 2007–2008.
- Orientation meeting within the project "Exposcuola 2007", University of Salerno, October 2008.

Teaching activity

Courses for degree and master degree programs

A.Y.2021–22 At the University of L'Aquila,
- Analisi Numerica, Degree in Mathematics, 6 CFU;
- Numerical Methods for Differential Equations, Master Degree in Mathematics, 6 CFU;
- Numerical methods for Stochastic Modelling, Master Degree in Mathematical Engineering, 3 CFU.

A.Y.2020–21 At the University of L'Aquila,
- Analisi Numerica, Degree in Mathematics, 6 CFU;
- Numerical Methods for Differential Equations, Master Degree in Mathematics, 6 CFU;
- Numerical Methods for Linear Algebra and Optimisation, Master Degree in Mathematical Engineering, 3 CFU.

A.Y.2019–20 At the University of L'Aquila,
- Analisi Numerica, Degree in Mathematics, 6 CFU;
- Numerical Methods for Differential Equations, Master Degree in Mathematics, 6 CFU;
- Numerical Methods for Linear Algebra and Optimisation, Master Degree in Mathematical Engineering, 6 CFU.

A.Y.2018–19 At the University of L'Aquila,
- Analisi Numerica, Degree in Mathematics, 6 CFU;
- Numerical Methods for Differential Equations, Master Degree in Mathematics, 6 CFU;
- High Performance Computing and Application to Differential Equations, Master Degree in Mathematical Engineering, 6 CFU.

A.Y.2017–18 At the University of L'Aquila,
- Advanced Numerical Analysis - Numerical Methods for Differential Equations, Master Degree in Mathematics, 6 CFU;
- Numerical Methods for Linear Algebra and Optimisation, Master Degree in Mathematical Engineering, 6 CFU.

A.Y.2016–17 At University of Salerno
- Calcolo Scientifico, Degree in Computer Science, 6 CFU;
- Calcolo Numerico II, Degree in Mathematics, 2 CFU.

A.Y.2015–16 At University of Salerno
- Analisi Numerica, Degree in Computer Science, 6 CFU;
- Calcolo Numerico II, CL in Mathematics, 1 CFU.

Courses for doctoral schools
- Numerics for stochastic differential equations, Gran Sasso Science Institute, April 2021 (10 hours).
- Numerics for stochastic differential equations, Ph.D. in Mathematics and Models, University of L'Aquila, February 2021 (10 hours).
- Metodi Numerici per Equazioni Differenziali, Scuola Superiore of the University of Udine, May 2020 (10 hours).
- Advanced Numerical Analysis, Ph.D. in Mathematics and Models, University of L'Aquila, January 2020 (6 hours).
- Numerics for stochastic ODEs, Gran Sasso Science Institute, February 2019 (10 hours).
- Algebra Lineare Numerica e Applicazioni, Ph.D. program in Mathematics, Physics and Applications, University of Salerno, A.Y. 2016–2017 (20 hours).
- Metodi numerici di integrazione geometrica per problemi Hamiltoniani, Ph.D. program in Mathematics, Physics and Applications, University of Salerno - Second University of Naples, A.Y. 2015–2016 (20 hours).
- Integrazione numerica di Equazioni Differenziali Stocastiche, Ph.D. program in Mathematics, Physics and Applications, University of Salerno - Second University of Naples, A.Y. 2014–2015 (20 hours).

Supervision of degree and master degree thesis
Advisor of the following thesis/master thesis at the University of L'Aquila:

A.A. 2020–21
- Davide Alessandroni, *Modellistica numerica delle interazioni su social network*, CL in Matematica, in preparation;
- Giorgio De Simone, *Modellistica numerica con ritardo per l'epidemiologia*, CL in Matematica;
- Ambra Ruscitti, *Modellistica numerica per la deformazione di immagini nei film di animazione*, CL in Matematica, in preparation;

- Sara Spadaccini, *Tecniche di ottimizzazione numerica per la computer graphics*, CL in Matematica;
- Sara Di Fazio, *Nonlinear stability analysis of stochastic discretizations*, CL Magistrale in Matematica;
- Ayobami Oluwafunmilayo Fayoyin, *Retarded numerical modelling for Covid-19*, CL Magistrale in Ingegneria Matematica, in preparation;

A.Y. 2019–20
- Hamid Salekinia, *Stability issues in stochastic discretisations*, Master Degree in Mathematical Engineering;
- Ahmed El Fauti, *Adapted numerical modelling of reaction-diffusion problems*, Master Degree in Mathematical Engineering;
- Alessandro Pellone, *Decomposizione ai valori singolari per la compressione di immagini digitali*, Degree in Mathematics;
- Stefano Bontempo, *Geometric numerical integration of Hamiltonian problems*, Master Degree in Mathematics;
- Silvia Ricci, *Drift-preserving numerical integration of stochastic Hamiltonian problems*, Master Degree in Mathematics;
- Patelankitkumar Vijaybhai, *Trigonometrically fitted finite difference schemes for a reaction-diffusion equation*, Master Degree in Mathematical Engineering.

A.Y. 2018–19
- Advisor of the master thesis double-degree of Krystina Kravchuk, *Geometric Numerical Integration*, Master Degree in Mathematics, University of L'Aquila - Silesian University in Katowice;
- advisor of the master thesis double-degree of Oksana Lyrun, *Stability issues in the numerical approximation of stochastic differential equations*, Master Degree in Mathematics, University of L'Aquila - Silesian University in Katowice;
- Chiara Epifano, *Numerical quadrature and applications to artistic volumetric lighting*, Master Degree in Mathematics;
- Roberta Matricciani, *Metodi generali lineari per la discretizzazione di problemi differenziali*, Degree in Mathematics;
- Mario Setta, *Aspetti numerici delle animazioni Disney: il metodo del punto materiale*, Degree in Mathematics;
- Benedetta Flammini, *Aspetti numerici del PageRank di Google*, Degree in Mathematics.

A.Y. 2017–18
- Advisor of the master thesis double-degree of Roman Vantukh, *Matrix Factorization for Recommender Systems: Singular Value Decomposition*, Master Degree in Mathematical Engineering, University of L'Aquila - Università di Leopoli "Ivan Franko";
- advisor of the master thesis double-degree of Marian Ptashynskyi, *Matrix Factorization for Recommender Systems: Lanczos Method*, Master Degree in Mathematical Engineering, University of L'Aquila - Università di Leopoli "Ivan Franko";
- Loris Mascioli, *Modellistica numerica per l'animazione di immagini*, Degree in Mathematics;
- Flavia Prosini, *Linear and nonlinear stability issues in the numerical discretization of ODEs*, Master Degree in Mathematics.

Advisor of the following thesis/master thesis at the University of Salerno:

A.Y. 2016–17 Degree in Mathematics
- Serena Buono, *Metodi numerici per l'analisi di sistemi di raccomandazione*;
- Rosina Capuano, *Funzioni spline e applicazioni*;
- Federica De Vito, *Tecniche di algebra lineare numerica per problemi di elevata dimensione*;
- Rosina Ferrante, *Approssimazione numerica di problemi ai limiti*;
- Marie Nicole Staiti, *Metodi energy-preserving per problemi di Poisson*;
- Serena Auletta, *Modellistica numerica per problemi differenziali stocastici* (co-advisor);
- Rosa Galeotafiore, *Alberi di Butcher e condizioni d'ordine per un metodo Runge-Kutta* (co-advisor);
- Carmela Moschella, *Dinamica a lungo termine di metodi lineari multistep per problemi conservativi* (co-advisor).

Degree in Computer Science
- Amedeo Aquino, *Animazione e modellazione in ambiente Maya*;
- Angela Cesarano, *Accelerazione mediante GPU di algoritmi numerici per l'analisi dell'inquinamento atmosferico*;
- Andrea De Maio, *Modellistica Numerica per l'Image Restoration*;
- Francesca Pappalardo, *Algoritmo MRI parallelo in ambiente CUDA e sua applicazione in ambito chirurgico*;
- Alberto Sergio, *Algoritmi numerici per la compressione di Immagini digitali*;
- Domenico Serra, *Tecniche di animazione 3D in ambiente Maya*;
- Carmine Sorgente, *Algoritmi numerici di Music Information Retrieval*;
- Lorenzo Valente, *Metodologie numeriche di trattografia per la ricostruzione di fibre nervose*;

A.Y. 2015–16
- Antonio Calabria, *Algoritmi numerici per il Digital Image processing*, Degree in Computer Science;
- Maria Elena Cammarano, *Algoritmi numerici per il trattamento di immagini digitali*, Degree in Computer Science;
- Emanuele Francesco Di Rubbo, *Metodi numerici per equazioni integrali stocastiche di Volterra*, Master Degree in Mathematics (co-advisor);
- Raffaele Donadio, *Approssimazione mediante B-spline per la computer graphics in ambiente Unity3D*, Degree in Computer Science;
- Davide Mastricci, *Metodi numerici per la gestione di sistemi di raccomandazione*, Degree in Computer Science;
- Alessandra Mastroianni, *Trattamento numerico a lungo termine di equazioni differenziali stocastiche oscillantii*, Degree in Mathematics (co-advisor);
- Valerio Materazzo, *Tecniche di algebra lineare numerica per il trattamento di Big Data*, Master Degree in Mathematics (co-advisor);
- Mattia Tomeo, *Architettura CUDA ed implementazione dell'algoritmo del PageRank di Google*, Degree in Computer Science;
- Andrea Ventola, *Metodi numerici equazioni Hamiltoniane stocastiche*, Master Degree in Mathematics (co-advisor).

A.Y. 2014–15
- Raffaella Coppola, *Metodi numerica di integrazione geometrica per problemi Hamiltoniani*, Degree in Mathematics;
- Martina Moccaldi, *Metodi impliciti-espliciti (IMEX) per sistemi di reazione-diffusione con fitting non polinomiale*, Master Degree in Mathematics (co-advisor);
- Carmen Scalone, *Risoluzione numerica di equazioni differenziali che modellizzano l'evoluzione di alcune classi di T-cellule*, Master Degree in Mathematics (co-advisor).

A.Y. 2013–14
- Lucia Caso, *Metodi impliciti-espliciti IMEX per equazioni alle derivate parziali e applicazioni in Immunologia*, Degree in Mathematics (co-advisor);
- Fabrizio Ricci, *Metodi numerici per equazioni differenziali con soluzione oscillante nella dinamica cellulare*, Degree in Mathematics, (co-advisor).

A.Y. 2012–13
- Martina Moccaldi, *Metodi numerici conservativi per sistemi di equazioni differenziali ordinarie*, Degree in Mathematics (co-advisor);
- Lucia Milo, *Metodi Runge-Kutta simmetrici per sistemi di equazioni differenziali ordinarie*, Degree in Mathematics (co-advisor).

A.Y. 2011–12
- Salvatore Gallo, *Metodi numerici per equazioni differenziali ordinarie con termine noto discontinuo*, Degree in Mathematics (co-advisor).

A.Y. 2010–11
- Elena Asciuti, *Metodi Numerici per equazioni differenziali ordinarie basati su formule di differenziazione all'indietro modificate*, Degree in Mathematics, (co-advisor);
- Giuseppe De Martino, *Metodi G-simplettici per la risoluzione numerica di problemi hamiltoniani*, Master Degree in Mathematics (co-advisor);
- Federica Gregorio, *Metodi numerici per y'=f(x,y) con f discontinua*, Degree in Mathematics (co-advisor).

A.Y. 2009–10
- Giovanna Califano, *Un'introduzione alle wavelets: dalla teoria matematica alle possibili applicazioni*, Degree in Mathematics (co-advisor).

Tutor of the following stages at the Numerical Analysis Laboratory of the University of Salerno:

A.Y. 2016–17 Degree in Computer Science:
- Giuseppe Adinolfi, topic: *numerical algorithms for social network*;
- Francesco Apicella, topic: *parallel numerical algorithms for high dimensional problems*;
- Amedeo Aquino, topic: *Maya for 3D animation*;
- Angela Cesarano, topic: *parallel numerical algorithms in CUDA-C*;
- Andrea De Maio, topic: *numerical algorithms for face recognition*;
- Francesco Odierna, topic: *parallel numerical algorithms for recommender systems*;
- Francesca Pappalardo, topic: *parallel numerical algorithms CUDA-C*;
- Alberto Sergio, topic: *numerical algorithms for image compression*;
- Domenico Serra, topic: *Dynamica: a Pixar framework for computer graphics*;
- Carmine Sorgente, topic: *numerical algorithms for sound recognition*;
- Lorenzo Valente, topic: *numerical algorithms for biomedical imaging*;
- Federico Vitale, topic: *numerical algorithms for computer graphics*.

Degree in Mathematics:
- Rosina Capuano, topic: *B-splines and applications*;
- Gaetano Semprevivo, topic: *numerical linear algebra for Big Data Analysis*.

A.Y. 2015–16   Degree in Computer Science:
- Antonio Calabria, topic: *numerical algorithms for digital image processing*;
- Maria Elena Cammarano, topic: *numerical linear algebra for digital image processing*;
- Raffaele Donadio, topic: *UNITY3D for computer graphics*;
- Davide Mastricci, topic: *numerical algorithms for data analysis*;
- Domenico Serra, topic: *NURBS and their applications in animation movies*;
- Mattia Tomeo, topic: *CUDA implementation of parallel numerical methods on GPUs*.

Degree in Mathematics:
- Natalina Cutillo, *numerical algorithms for Big Data*.

L'Aquila, September 13, 2021