Curriculum Vitae di Marco Caliari

Informazioni personali

Marco Caliari
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Nato il 6 ottobre 1976 a Villafranca di Verona, Verona, ITALIA

Identificativi della ricerca

ORCID	0000-0002-1277-069X
Scopus	6701600045
ResearcherID	B-6835-2013
MathSciNet	713004

Interessi di ricerca

Integratori esponenziali per PDEs semidiscretizzate, lineari e non lineari (differenze finite, elementi finiti, metodi spettrali, "meshfree"), con particolare attenzione all'approssimazione dell'esponenziale di matrice (cf. [52, 49, 51, 48, 39, 46, 32, 41, 29, 30, 21, 26, 22, 18, 15, 11, 9, 8, 7, 6, 2, 1]).

Integratori numerici per equazioni di Schrödinger non lineari (differenze finite, metodi spettrali, metodi di splittin esponenziale) (cf. [50, 36, 29, 25, 24, 19, 14, 13, 10, 5, 4, 3]) e calcolo di ground state e strutture auto-preservanti (cf. [31, 35, 34, 28, 20, 4]).

Interpolazione e iperinterpolazione bivariata e trivariata su nodi ottimali come i nodi di Padova (cf. [47, 40, 44, 45, 40, 43, 42, 38, 37, 33, 27, 17]).

Posizione attuale

dal 10/2019	Co-delegato del Rettore alla Didattica, Università degli Studi di Verona.

10/2018–09/2021	**Presidente del Collegio Didattico di Matematica**, Università degli Studi di Verona.
08/2018	Abilitazione scientifica nazionale di prima fascia in 01-A5 Analisi numerica (dal 31 agosto 2018 al 31 agosto 2028).
dal 10/2015	Professore associato in MAT/08 - Analisi numerica, Dipartimento di Informatica, Università degli Studi di Verona.
04/2022	Membro del **Collegio di dottorato** in Matematica, Università degli Studi di Trento, 38-esimo ciclo.

Posizioni precedenti

2013–2021	Membro della Collegio di dottorato in Matematica, Universtità di Trento, 29–37-esimo ciclo.
2009–2012	Membro del Collegio di dottorato in Informatica, Università di Verona, 25–28-esimo ciclo.
10/2007–09/2015	Ricercatore in MAT/08 Analisi numerica, presso il Dipartimento di Informatica, Università degli Studi di Verona.
05/2006–08/2007	Periodo post-doc al Dipartimento di Matematica dell'Università di Innsbruck, Austria, supervisore Prof. Alexander Ostermann, parzialmente supportato dalla borsa di studio "Fondazione Ing. Aldo Gini".
09/2005–08/2007	Posizione post-doc al Dipartimento di Matematica Pura ed Applicata, Università degli Studi di Padova.
03/2004–08/2005	Borsa di ricerca *Approssimazione numerica con elementi finiti di PDEs e polinomiale di operatori integrali* presso il Dipartimento di Informatica, Università degli Studi di Verona.
03/2003–02/2004	Borsa *Studio numerico di un modello stocastico per fluidi quantistici* presso il Dipartimento di Informatica, Università degli Studi di Verona.

Formazione

11/1999–11/2002	Dottorato di ricerca in Matematica Computazionale, 15-esimo ciclo, Università degli Studi di Padova. Titolo della tesi *Efficient implementation of exponential integrators for 2D and 3D advection-diffusion equations*. Supervisori: Prof. Marco Vianello e Dr. Luca Bergamaschi..

09/1995–11/1999 Laurea (quadriennale) in Matematica, Università degli Studi di Padova. Titolo della tesi *Calcolo dell'operatore esponenziale per matrici sparse, non simmetriche, di grande dimensione.* Supervisori: Prof. Marco Vianello e Dr. Luca Bergamaschi.

Talks, seminari, conferenze

07/2023 *A μ-mode BLAS approach to tensor-structured problems, with applications to evolutionary equations*, **Invited speaker** at the special session "Recent trends on ODEs methods, low-rank approximations, and image-processing techniques" at the International congress "Mathematical modeling in engineering & human behaviour 2023", July 11–14, Valencia, Spain.

06/2023 *A μ-mode BLAS approach for tensor-structured problems, with an application to ODEs*, **Invited speaker** at the special session "Recent advances in the approximation of matrix functions" at trends on ODEs methods, low-rank approximations, and image-processing techniques" at the 4th International Conference "Numerical Computations: Theory and Algorithms", June 14–20, Pizzo Calabro.

02/2023 *Efficient exponential direction splitting schemes for problems with d-dimensional Kronecker structure*, **Invited speaker** at the Workshop on "Software for Approximation", SA2023, February 8–10, Torino.

07/2022 Member of the Organizing Committee of *One day — Young researchers seminars, Math Applications & Models*, July 8, Verona.

05/2022 *A μ-mode approach for exponential integrators: action of φ-functions of Kronecker sums*, **Invited speaker** at the minisymposium "Recent advances in time-integration of PDEs", ICCMAE, May 12–14, Mississippi State University

09/2021 *An improved Rational EXponential Integrator for hyperbolic and oscillatory PDEs*, **Invited speaker** at the minysimposium "Innovative numerical methods for evolutionary partial differential equations. Part III: Control and Multiscale", SIMAI 2020+2021, August 30–September 3, Parma.

06/2021 — *A μ-mode-based integrator for solving evolution equations in Kronecker form*, **Invited speaker** at the minysimposium "Matrix computations and numerical", 8ECM, June 20–26, Portorož, Slovenia.

11/2019 — *A free boundary approach for Gross–Pitaevskii Equations*, **Invited speaker** at the Workshop "Modeling and Simulation for Quantum Condensation, Fluids and Information", November 18–22, Singapore.

09/2019 — Member of the Organizing Committee of *Dolomites Research Week on Approximation 2019*, September 2–6, Alba di Canazei (TN).

02/2019 — *Backward error analysis for the matrix exponential based on norms and pseudo-spectra*, Workshop INdAM–GNCS "Numerical methods for multiscale control problems and applications", 7–8 February, Verona.

01/2019 — *A new backward error analysis for the matrix exponential based on pseudo-spectra*, Workshop "Numerical Analysis", 26 January 2019, Grillhof in Vill (Innsbruck, Austria)

12/2018 — *A new backward error analysis for the matrix exponential based on pseudo-spectra*, **Invited speaker** at the workshop *Integrating the Integrators for Nonlinear Evolution Equations: from Analysis to Numerical Methods, High-Performance-Computing and Applications*, December 2–7, 2018, Banff Centre, Alberta, Canada.

09/2017 — Member of the Organizing Committee of *Dolomites Research Week on Approximation 2017*, September 4–8, Alba di Canazei (TN).

09/2016 — Member of the Organizing and Scientific Committees of *Dolomites Worskhop on Constructive Approximation and Applications 2016*, September 8–13, 2016, Alba di Canazei (TN).

03/2016 — *Splitting methods for the magnetic Schroedinger equation*, MOX, Politecnico di Milano, March 31, 2016.

09/2015 — *Splitting methods for the Schrödinger equation with vector potential*, **invited speaker** at the minisymposium *Nonlinear evolution equations*, NUMDIFF-14, September 7–11, 2015, Halle (Germany).

09/2014 — Member of the Organizing Committee of *Dolomites Research Week on Approximation 2014*, September 8–12,

Alba di Canazei (TN).

11/2013 Member of the Organizing Committee of *Workshop on Multivariate Approximation*, November 29–30, 2013, Verona.

09/2013 Member of the Organizing Committee of *Dolomites Research Week on Approximation 2013*, September 9–13, Alba di Canazei (TN).

09/2012 Member of the Organizing Committee of *3rd Dolomites Workshop on Constructive Approximation and Applications*, September 9–14, Alba di Canazei (TN).

09/2011 Member of the Organizing Committee of *Dolomites Research Week on Approximation 2011*, September 5–9, Alba di Canazei (TN).

07/2011 *Approximation of operator functions for exponential integrators*, ICIAM 2011, July 18–22, Vancouver (CANADA).

10/2010 Innovative integrators, October 27–30, Innsbruck (A).

09/2010 Member of the Organizing Committee of *Dolomites Research Week on Approximation 2010*, September 6–9, Alba di Canazei (TN).

09/2010 *Meshfree exponential integrators*, Dolomites Research Week on Approximation 2010, September 6–9, Alba di Canazei (TN).

04/2010 *A splitting method for the magnetic Schrödinger equation*, **invited speaker** at Two days on Splitting Methods for Evolution Equations, April 7–10, 2010, Igls–Vill (Innsbruck, A).

09/2009 *Spectral methods for dissipative nonlinear Schrödinger equations*, Three days on Mathematical Models of Quantum Fluids, September 14–17, 2009, Verona.

09/2009 Member of the Organizing Committee of workshop *Three days on Mathematical Models of Quantum Fluids*, September 14–17, Verona.

09/2009 Member of the Organizing Committee of *2nd Dolomites Workshop on Constructive Approximation and Applications*, September 4–9, Alba di Canazei (TN).

09/2009 *Polynomial interpolation and algebraic cubature at the Padua points*, 2nd Dolomites Workshop on Constructive

Approximation and Applications, September 4–9, 2009, Alba di Canazei (TN).

07/2009 *A numerical code for fast interpolation and cubature at the Padua points*, 9th International Conference Computational and Mathematical Methods in Science and Engineering, June 30, July 1–3, 2009, Gijón (E).

05/2009 *Padua points: theory, computation and applications*, 5th Austrian Numerical Analysis Day, May 7–8, Innsbruck (A).

09/2008 *Efficient implementation of bivariate interpolation and cubature at Padua points*, SIMAI 2008, September 15–19, Roma.

09/2008 Member of the Organizing Committee of *Dolomites Research Week on Approximation 2008*, September 4–8, Alba di Canazei (TN).

07/2008 *Dynamics of rotating Bose–Einstein condensates*, Mathematikkolloquium, July 30, Universität Innsbruck (A).

04/2008 *A minimisation approach for computing the ground state of Gross–Pitaevskii systems*, Nonlinear Phenomena in Degenerate Quantum Gases 2008, April 1–4, Toledo (E).

01/2008 *Location and phase segregation of ground states for 2D Gross–Pitaevskii systems*, Mathematikkolloquium, January 8, Universität Innsbruck (A) .

09/2007 Member of the Organizing Committee of *Dolomites Research Week on Approximation 2007*, September 3–7, Alba di Canazei (TN).

07/2007 *Efficient Implementation of exponential Rosenbrock-type methods*, SciCADE 2007, July 9–13, 2007, Saint-Malo (F).

04/2007 *Implementation of Rosenbrock-type exponential methods*, 3rd Austrian Numerical Analysis Day, April 26–27, Wien (A).

09/2006 Member of the Organizing Committee of *1st Dolomites Workshop on Constructive Approximation and Applications*, September 8–12, Alba di Canazei (TN).

09/2006 *Bivariate Lagrange interpolation at the Padua points: computational aspects*, 1st Dolomites Workshop on Construc-

tive Approximation and Applications, September 8–12, Alba di Canazei (TN).

09/2006 *(Iper)interpolazione su domini bivariati*, Department seminar, September 5, Department of Computer Science, University of Verona.

07/2006 *Comparing Leja and Krylov approximations of large scale matrix exponentials*, Applied Linear Algebra 2006, July 24–27, Düsseldorf (D).

06/2006 *Efficient approximation of the exponential operator by the ReLPM*, High Performance Computing Seminar, June 29, Institut für Astro- u.Teilchenphysik, ZID, Institut für Informatik, Universität Innsbruck (A).

05/2006 *Comparing Leja and Krylov approximations of large scale matrix exponentials*, ICCS 2006, May 28–31, Reading (UK).

05/2005 *The Leja–Euler–Midpoint exponential integrator for parabolic equations*, International conference "Numerical Analysis: the State of the Art", May 19–21, Rende (CS).

06/2004 *The ReLPM exponential integrator for FE discretizations of advection-diffusion equations*, ICCS 2004, June 6–9, Krakow (POLAND).

05/2004 *A ReLPM-based exponential intergrator for advection-diffusion-reaction equations*, workshop on Dynamical Systems on Matrix Manifolds: Numerical Methods and Applications, May 27–28, 2004, Bari.

03/2004 *Numerical experiments of generation of vortex lines in Madelung fluid*, miniworkshop on Mathematical Problems in Modeling Generation and Dynamics of Vortices, March 12–13, 2004, Verona.

09/2003 *Un integratore esponenziale basato sull'interpolazione di Leja per problemi di convezione-diffusione 2D e 3D*, XVII UMI Conference, September 8–13, 2003, Milano.

07/2003 *Dinamica di un superfluido da un modello stocastico*, Department seminar, Department of Computer Science, University of Verona.

06–07/2003 *The real Leja points method of propagation for advection-diffusion equations*, SciCADE 2003, June 30–July 4, 2003, Trondheim (NORWAY).

03/2003	*Approssimazione efficiente dell'esponenziale di matrice per problemi di convezione-diffusione*, "Due giorni di algebra lineare numerica", March 6–7, 2003, Pisa.
05/2002	*Interpolating discrete advection-diffusion propagators at spectral Leja sequences*, SIMAI 2002, May 27–31, Chia Laguna (CA).
07–08/2001	*Efficient approximation of the exponential operator for 2D advection-diffusion problems*, SciCADE 2001, July 29–August 3, 2001, Vancouver (CANADA).

Gruppi di ricerca

dal ∼2003	GNCS-INdAM Gruppo Nazionale per il Calcolo Scientifico
dal 2015	CAA: Padova–Verona research group on *"Constructive Approximation and Applications"*
dal 2017	Rete ITaliana di Approssimazione

Progetti di ricerca

2023	GNCS Project "Metodi avanzati per la risoluzione di PDEs su griglie strutturate, e non." (coord. Dott. Maurizio Tavelli, University of Bolzano).
2022	GNCS Project "Tecniche avanzate per problemi evolutivi: discretizzazione, algebra lineare numerica, ottimizzazione" (coord. Dott. Davide Palitta, University of Bologna).
2020–2022	University of Verona "Progetto ricerca di base 2019", "Geometric Evolution of Multi Agent Systems", **project manager** Prof. Marco Caliari.
2019	GNCS Project "Approssimazione multivariata ed equazioni funzionali per la modellistica numerica" (coord. Prof.ssa Elisa Francomano, Università di Palermo).
2018	GNCS Project "Metodi, algoritmi e applicazioni dell'approssimazione multivariata" (coord. Dott.ssa Alessandra De Rossi, University of Turin).
2017	PRIN "Innovative Numerical Methods for Evolutionary Partial Differential Equations and Applications", Principal Investigator Prof. Giovanni Russo, UO Verona.

2017	GNCS Project "Multivariate approximation: theory and applications" (coord. Prof. Marco Vianello, University of Padua).
2012	GNCS Project "Approssimazione multivariata con basi polinomiali e radiali" (coord. Prof. Marco Vianello).
2011	TWF-Projekt Nr. UNI-0404/880 (Tiroler Wissenschaftsfonds) "Meshfree exponential integrators" (coord. Dr. Stefan Rainer).
2010	GNCS Project "Near Optimal Points for Multivariate Interpolation" (coord. Prof. Leonard Peter Bos).
2009–2010	University of Padua Project "Progetto Interpolazione ed Estrapolazione: nuovi algoritmi ed applicazioni" (coord. Prof. Michela Redivo Zaglia).
2009	GNCS Young Researchers "Metodi numerici per equazioni di Schrödinger non lineari".
2007–2008	University of Verona, Department of Computer Science Project "Soluzione groundstate per l'equazione di Gross–Pitaevskii".
2004–2005	PRIN 2004 "Campi aleatori, evoluzioni stocastiche ed applicazioni a modelli di sistemi interagenti" (coord. Prof. Albert Gandolfi), Verona unity "Modelli stocastici in dimensione finita e infinita e limiti di scala" (coord. Prof. Laura Maria Morato).
2003–2004	PRIN 2003 "Sistemi dinamici su manifolds di matrici: metodi numerici ed applicazioni" (coord.. Prof. Luciano Lopez), Padova unity "Approssimazione di funzioni di matrici per la soluzione numerica di equazioni differenziali" (coord. Prof. Marco Vianello).
2003	PRIN 2003 "Processi stocastici a struttura spaziale e loro applicazioni" (coord. Prof. Alberto Gandolfi), Verona unity "Problemi limite per processi con struttura spaziale e algoritmi stocastici" (coord. Prof. Laura Maria Morato).
2002	University of Padua Project "Metodi efficienti per l'approssimazione di trasformate discrete non locali" (coord. Prof. Marco Vianello).

Comitati editoriali

Dolomites Research Notes on Approximation (Scopus CiteScore 2019: 1.3, SJR 2019 0.51 (Q2), Mathscinet All MCQ 2019: 0.43), peer-reviewed, open access.

Insegnamento e supervisione

dal 2007 — Supervisor or co-supervisor of 30 Bachelor's Thesis, 13 Master's Thesis, two Ph.D. Thesis, two post-doc students

2021–2022 — Lecturer of Laboratorio di Calcolo Numerico 1, Laboratorio di Calcolo Numerico 2, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics and Numerical Methods for Partial Differential Equations in Master's Degree in Mathematics at University of Verona.

10/2022 — Supervisor of Gianmaria Lucca Bachelor's Thesis *Raffinamento uniforme locale per la dinamica di strutture quantistiche*, University of Verona

07/2022 — Supervisor of Pham Truong Hoang Nhan Master's Thesis *Finite Element Solution of Direct and Inverse p-Laplace Problems*, University of Verona

07/2022 — Supervisor of Stefano Muzzolon Bachelor's Thesis *Implementazione di un integratore esponenziale a bassa regolarità per l'equazione di Schrödinger quadratica*, University of Verona

11/2021 — **Supervisor of dr. Elisa Calzola, post-doc position** at the University of Verona, *Efficient numerical methods for multiscale evolutionary equations with non-local interaction and applications.*

10/2021 — Supervisor of Michele Casarotto Bachelor's Thesis *Condizioni al bordo di Dirichlet per il modulo al quadrato (MSD) e applicazione all'equazione di Schrödinger*, University of Verona

10/2021 — Supervisor of Helena Biscevic Master's Thesis *Numerical methods for Bose–Einstein condensates with disorder potentials*, University of Verona

2020–2021 — Lecturer of Laboratorio di Calcolo Numerico 1, Laboratorio di Calcolo Numerico 2, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied

	Mathematics and Numerical Methods for Partial Differential Equations in Master's Degree in Mathematics at University of Verona.
03/2021	Supervisor of Sara Baltieri Master's Thesis *Numerical approximation of fractional derivatives and applications*, University of Verona
10/2020	Supervisor of Marco Feder Master's Thesis *Iterative methods for rational approximations to the action of the matrix exponential*, University of Verona
03/2020	Supervisor of Alexander Moriggl Master's Thesis *A more accurate and reliable Rational EXponential Integrator*, University of Verona
02/2019	**Supervisor of dr. Simona Schiavi, post-doc position** at the University of Verona, *Progettazione ed implementazione di strumenti avanzati e tutorials di supporto ai laboratori didattici di modellizzazione e simulazione numerica presso il CdLM in Mathematics.*
2019–2020	Lecturer of Laboratorio di Calcolo Numerico 1, Laboratorio di Calcolo Numerico 2, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics and Numerical Methods for Partial Differential Equations in Master's Degree in Mathematics at University of Verona.
08/2019	**Supervisor of PhD student Fabio Cassini**, University of Trento, XXXY cicle.
07/2019	Supervisor of Fabio Cassini Master's Thesis *A general matrix function toolbox for exponential integrators*, University of Verona.
11/2018	Supervisor of Matteo Milani Bachelor's Thesis *Analysis and implementation of ParaExp method for High-Frequency Electromagnetic Simulations*, University of Verona.
2018–2019	Lecturer of Laboratorio di Calcolo Numerico 1, Laboratorio di Calcolo Numerico 2, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics and Advanced Numerical Analysis II and Scientific Computing in Master's Degree in Mathematics at University of Verona.
11/2018	Supervisor of Marco Feder Bachelor's Thesis *Analysis and open implementation of ODE23t*, University of Ve-

rona.

07/2018	Supervisor of Paolo Bighignoli Bachelor's Thesis *Spiegazione e implementazione dettagliata del metodo Krylov–Schur per il calcolo di autovalori*, University of Verona.
04–05/2017	Co-lecturer of Splitting Methods for PDEs (togheter with Prof. Alexander Ostermann, University of Innsbruck) in PhD school in Mathematics of the Unviersity of Trento.
2017–2018	Lecturer of Laboratorio di Sistemi Stocastici, Laboratorio di Calcolo Numerico 2, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics and Advanced Numerical Analysis II and Scientific Computing in Master's Degree in Mathematics at University of Verona.
2017–2018	Lecturer in Piano Lauree Scientifiche entitled "Frattali e caos" with Liceo Scientifico Statale "E. Medi", Villafranca di Verona.
11/2017	Supervisor of Michela Ceraico Bachelor's Thesis *Metodi di splitting per l'equazione Korteweg–de Vries*, University of Verona.
11/2017	Supervisor of Giacomo Tabarelli Bachelor's Thesis *Simulazione in FreeFem++ della Dinamica di Vortici Quantistici*, University of Verona.
10/2017	Supervisor of Michele Ginesi Master's Thesis *Numerical evaluation of some special functions in GNU Octave*, University of Verona.
10/2017	Supervisor of Alessandro Festa Bachelor's Thesis *Approssimazione degli autovettori per il problema del PageRank*, University of Verona.
07/2017	Supervisor of Fabio Cassini Bachelor's Thesis *Anaysis and implementaion of TR-BDF2 in GNU Octave*, University of Verona.
07/2017	Supervisor of Alberto Carretta Bachelor's Thesis *Numerical solution of a model of optimal debt management and bankruptcy*, University of Verona.
07/2017	Supervisor of Jacopo Li Vigni Bachelor's Thesis *Metodi simplettici per il problema degli n-corpi*, University of Verona.

06–07/2017	Tutor of high school students Maddalena Tedeschi and Emanuele Farinazzo (ASL).
04/2017	Mentor of Google Summer of Code 2017 for Michele Ginesi, project *Special functions in GNU Octave*.
03/2017	Supervisor of Chiara Segala Master's Thesis *Implementation of exponential integrators in GNU Octave*, University of Verona.
11/2016	**Supervisor of Ph.D. student** Franco Zivcovich, University of Trento, XXXII cicle. Thesis title *Backward error accurate methods for computing the matrix exponential and its action* (discussed on January 24, 2020)
2016–2017	Lecturer of Laboratorio di Sistemi Stocastici, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics and Advanced Numerical Analysis II and Research and Scientific Computing in Master's Degree in Mathematics at University of Verona.
2016–2017	Lecturer in Piano Lauree Scientifiche entitled "Frattali e caos" with Liceo Scientifico Statale "E. Medi", Villafranca di Verona.
07/2016	Supervisor of Franco Zivcovich Master's Thesis *Hermite interpolation for the matrix exponential*, University of Verona.
06–07/2016	Tutor of high school students Davide Perini Toro and Paolo Venturini (internship).
2015–2016	Lecturer of Laboratorio di Sistemi Stocastici, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics and Advanced Numerical Analysis II and Research and Modelling Seminar in Master's Degree in Mathematics at University of Verona.
05/2016	Mentor of ESA Summer of Code 2016 for Cristiano Dorigo, project *Iterative methods for sparse linear systems in GNU Octave*.
04/2016	Mentor of Google Summer of Code 2016 for Chiara Segala, project *Exponential integrators in GNU Octave*.
11/2015	Supervisor of Giada Basso Bachelor's Thesis *Simulazione Numerica della Dinamica di Vortici Quantistici*, University of Verona.

2015–2016	Lecturer in Piano Lauree Scientifiche entitled "Dinamica delle popolazioni" with Liceo Scientifico Statale "E. Medi", Villafranca di Verona.
2014–2015	Lecturer of Laboratorio di Sistemi Stocastici, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics and Advanced Numerical Analysis II and Scientific Computing in Master's Degree in Mathematics at University of Verona.
03/2015	Supervisor of Gregorio Pellegrini Master's Thesis *Polynomial Chaos Expansion with applications to PDESs*, University of Verona.
03/2015	Supervisor of Cristiano Dorigo Bachelor's Thesis *Is Householder orthogonalization better than Gram-Schmidt in GMRES?*, University of Verona.
03/2015	Supervisor of Franco Zivcovich Bachelor's Thesis *Interpolazione di Hermite–Newton–Leja per l'esponenziale di matrice*, University of Verona.
2014–2015	Lecturer in Piano Lauree Scientifiche entitled "Ottimizzazione" with Liceo Scientifico Statale "E. Medi", Villafranca di Verona.
10/2014	**Second advisor** of Stefan Rainer Ph.D. Thesis *Meshfree exponential integrators*, supervisor Prof. Alexander Ostermann, University of Innsbruck.
10/2014	Supervisor of Elena Gaburro Master's Thesis *Domain decomposition methods and high order edge finite elements in applied computational electromagnetism*, University of Verona.
2013–2014	Lecturer of Laboratorio di Sistemi Stocastici, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics and Laboratory of Advanced Numerical Analysis in Master's Degree in Mathematics at University of Verona.
2013–2014	Lecturer in Piano Lauree Scientifiche entitled "Crittografia" with ITIS "G. Marconi", Liceo Scientifico "A. Messedaglia" and il Liceo Scientifico "G. Fracastoro" of Verona.
2013–2014	Lecturer in Piano Lauree Scientifiche entitled "Crittografia" with Liceo Scientifico Statale "E. Medi" of Villafranca di Verona.

07/2013	Supervisor of Giulia Simeoni Master's Thesis *Numerical investigation of soliton dynamics for nonlinear Schrödinger equations*, University of Verona.
07/2013	Supervisor of Roberta Barbi Bachelor's Thesis *Computing the first eigenpar of the p-Laplacian*, University of Verona.
03/2013	Supervisor of Sara Novarini Bachelor's Thesis *Un metodo numerico per la valutazione dei bond a scadenza sul modello di Schaefer e Schwartz*, University of Verona.
03/2013	Supervisor of Mattia Tenuti Bachelor's Thesis *Inclusione di codice compilato in un ambiente per il calcolo numerico*, University of Verona.
03/2013	Co-supervisor of Marcello Bellomi Master's Thesis *Eigenvalue problems in anisotropic spaces*, supervisor Prof. Marco Squassina, University of Verona.
2012–2013	Lecturer in Piano Lauree Scientifiche entitled "Crittografia" with Liceo Scientifico Statale "E. Medi" of Villafranca di Verona.
12/2012	Supervisor of Diego Rigo Bachelor's Thesis *Analisi di un metodo del terzo ordine per le equazioni iperboliche*, University of Verona.
12/2012	Supervisor of Chiara Piazzola Bachelor's Thesis *Analisi di un metodo del terzo ordine per il trasporto di funzioni discontinue*, University of Verona.
2012–2013	Lecturer of Laboratorio di Sistemi Stocastici, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics and Scientific Computing and Laboratory of Advanced Numerical Analysis in Master's Degree in Mathematics at University of Verona.
10/2012	Supervisor of Mauro Bonafini Bachelor's Thesis *Efficent numerical methods for soliton dynamics of nonlinear Schrödinger equations*, University of Verona.
12/2011	Supervisor of Alessando Stella Bachelor's Thesis *Confronto tra integratori esponenziali per il prezzamento di opzioni americane*, University of Verona.
2010–2011	Lecturer of Laboratorio di Sistemi Stocastici, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics and Scientific Computing in Master's Degree in Mathematics at University of Verona.

2011–2012	Lecturer in Piano Lauree Scientifiche entitled "Probabilità, statistica e false credenze" with Liceo Scientifico Statale "E. Medi" di Villafranca di Verona.
10/2011	Supervisor of Andrea Alban Bachelor's Thesis *Metodi numerici per il prezzamento di opzioni asiatiche*, University of Verona.
2010–2011	Lecturer of Laboratorio di Sistemi Stocastici, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics and Scientific Computing in Master's Degree in Mathematics, University of Verona.
2010–2011	Lecturer in Piano Lauree Scientifiche entitled "Probabilità, statistica e false credenze" with Liceo Scientifico Statale "E. Medi" di Villafranca di Verona.
20/2010	Supervisor of Lisa Formis Bachelor's Thesis *Exponential integrators for option pricing*, University of Verona.
10/2010	Supervisor of Simone Parisotto Bachelor's Thesis *Nonequispaced Fourier Transform and Applications*, University of Verona.
03/2010	Supervisor of Matteo Merci Bachelor's Thesis *Metodi di calcolo per probabilità invarianti per catene di Markov*, University of Verona.
2009–2010	Lecturer of Laboratorio di Calcolo Numerico, Laboratorio di Sistemi Stocastici, Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics, University of Verona.
2009–2010	Lecturer in Progetto Lauree Scientifiche entitled "Dinamica di popolazioni" with Liceo Scientifico Statale "E. Medi" di Villafranca di Verona.
11/2009	Co-supervisor of Chiara Carraro Bachelor's Thesis *Simulazione di un modello stocastico di ecosistema cellulare*, supervisor Prof. Laura Maria Morato, University of Verona.
11/2009	Supervisor of Anna Bassi Bachelor's Thesis *The shooting method for a stock value*, University of Verona.
09/2009	Supervisor of Sara Mazzi Bachelor's Thesis *A numerical approach for computing the ground state of a nonlinear Schrödinger equation*, University of Verona.

03/2009	Co-supervisor of Mark Pianegonda Bachelor's Thesis *Orbite periodiche della mappa del gatto*, supervisor Prof. Gaetano Zampieri, University of Verona.
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2008–2009	Lecturer of "Introduzione ad un ambiente per il calcolo scientifico", in the Ph.D. program in Neuroscienze e Scienze Psicologiche e Psichiatriche, University of Verona.
2008–2009	Lecturer in Progetto Lauree Scientifiche entitled "Dinamica di popolazioni" with Liceo Scientifico Statale "E. Medi" di Villafranca di Verona.
2007–2008	Lecturer of Matematica di Base, Laboratorio di Calcolo Numerico, Laboratorio di Metodi Numerici per le Equazioni Differenziali in Bachelor's Degree in Applied Mathematics, University of Verona.
07/2007	Co-supervisor of Roberto Montagna Bachelor's Thesis *Iperinterpolazione su punti di Xu e interpolazione su punti di Padova: aspetti computazionali*, supervisor Prof. Stefano De Marchi, University of Verona.

Altre attività

2016	Member of the committee for the selection of one "Ricercatore a tempo determinato junior" in 01/A5 Numerical Analysis MAT/08 at the Department of Computer Science, University of Verona, G.U. 59, 26/07/2016.
∼2014–2018	Member (chairman since 2016) of the committee for the selection of substitute teachers in mathematics and physics at the Department of Computer Science, University of Verona.
∼2014–2018	Chairman of the committee for the selection of tutor students in mathematics and physics at the Department of Computer Science.
dal ∼2003	Referee activities for several journals in numerical analysis (AIAA J., J. Comp. Phys., Num. Alg., Comp. Math. Appl., Comp. Phys. Commun., Appl. Math. Comp., J.

Comput. Appl. Math., SIAM J. Numer. Anal., Int. J. Comp. Math., among others).

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