

# CURRICULUM VITÆ ET STUDIORUM

## Prof. Alessandra Aimi

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### PERSONAL DATA

Place and date of birth: Fidenza (PR), April 22<sup>nd</sup>, 1967.  
Citizenship: italian.  
Civil status: married, 3 children  
Place of residence: via fra' S. Davoli 26, Fidenza (PR).

### ACADEMIC POSITION

- **28/03/2017:** Qualification to Full Professorship
- **Since October 1<sup>st</sup>, 2014:** Associate Professor in Numerical Analysis, working at Mathematical, Physical and Computer Sciences Department of Parma University.

### PREVIOUS POSITIONS AND GRANTS

- **From 16/11/1997 to 30/09/2014:** Assistant Professor in Numerical Analysis, working at Mathematics and Computer Science Department of Parma University.
- **From 1/11/1994 to 31/10/1997:** financially supported PhD student in *Computational Mathematics and Operational Research* at the University of Milano (X cycle).
- **From 1/1/1992 to 31/10/1994:** E.U.L.O. (Ente Universitario della Lombardia Orientale) grant holder, for research and teaching activities in Numerical Analysis at Engineering Faculty of Brescia University.

### EDUCATION

- **1998: PhD in Computational Mathematics** with a thesis entitled: "*New numerical integration schemes for the solution of (hyper)singular integral equations with Galerkin BEM*" (supervisor: Prof. Mauro Diligenti).
- **1990: Graduated (summa cum laude) in Mathematics** at Parma University, with a dissertation entitled: "*Un'applicazione del metodo degli invarianti ortogonali all'operatore dell'elasticità in un rettangolo*" (supervisors: Prof. Lucilla Bassotti Rizza, Prof. Mauro Diligenti).

### ATTENDANCE TO WORKSHOPS, SUMMER SCHOOLS AND SPECIALIZATION COURSES

- Workshop “*Boundary Elements and Friends*”, Innsbruck, 25-27 Agosto 2022
- Workshop GNCS “*Metodi di approssimazione locale con applicazioni all’analisi isogeometrica e alle equazioni integrali di contorno*”, Florence, 28-29 November 2019
- Workshop “*INTEGRAL EQUATIONS: RECENT ADVANCES AND APPLICATIONS*”, Politecnico di Torino, 23-24 September 2019
- Workshop “*Design of Reliable, Exact, and Application-oriented techniques for geometric Modeling and numerical Simulations (DREAMS)*”, INdAM, Rome, January 22-26, 2018
- Workshop GNCS “New numerical techniques for the solution of transient problems by BEM”, University of Parma, October 26-27, 2017
- INdAM Meeting “Structured matrices in Numerical Linear Algebra: Analysis, Algorithms and Applications, Cortona (Ar), September 4-8 2017
- Workshop “Due giorni di Algebra Lineare Numerica”, Università dell’Insubria, 16-17 Febbraio 2017
- Workshop “*Design of Reliable, Exact, and Application-oriented techniques for geometric Modeling and numerical Simulations (DREAMS)*”, Rome “Tor Vergata”, January 26-27, 2016
- Workshop INdAM-GNCS “*Analisi isogeometrica e metodi agli elementi di contorno*”, Parma, September 17, 2015
- Workshop IWATA “International Workshop on Approximation Theory and Applications”, Rifreddo (Potenza), September 12-13, 2013
- Workshop GNCS “Accoppiamento di metodi numerici per BIEs e PDEs relative a problemi evolutivi esterni e multistrato”, Torino Polythecnic, February 18-19, 2013
- Workshop “BEM on the Saar 2012”, Saarland University, Saarbrucken, May 14-16, 2012
- Workshop GNCS “Tecniche numeriche per problemi di propagazione di onde elastiche in multidomini”, Parma University, January 31, 2012
- Workshop “Time Domain Boundary Integral Equations: Algorithms, Analysis, Applications”, Max Plank Institute for Mathematics in the Sciences, Leipzig, May 4-6, 2011
- Workshop “Space-time Boundary Integral Equation Methods for Wave Propagation Problems”, Torino Polythecnic, September 9, 2010
- Workshop “Integral Equations: recent numerical developments and new applications”, Parma University, October 29-30, 2009
- DWCAA09, 2nd Dolomites Workshop on Constructive Approximation and Applications, Alba di Canazei (Trento), September 4-9, 2009
- International Workshop “Advanced Numerical Methods in Seismology”, Brescia University, November 17, 2008
- Workshop “Equazioni Integrali: recenti sviluppi numerici e nuove applicazioni”, Parma University, September 27-28, 2007
- SIMAI Meeting on Applied Mathematics development perspectives in Italy, Parma University, May 18-19, 2007
- Workshop “Algebra Lineare Numerica e Applicazioni”, Padua University, February 26-27, 2007
- Workshop “Algebra Lineare Numerica e Applicazioni”, Pisa University, January 31- February 1, 2002
- Workshop “Teoria dell’approssimazione nell’ambito della risoluzione numerica di equazioni differenziali e integrali”, Cortona, September 25-29, 1995
- International Workshop “Recent advances in Numerical Methods for P.D.E.”, Torino Polythecnic, February 14-16, 1995
- “XII Scuola di Matematica Computazionale”, Vico Equense, September 7-15, 1994
- “XI Scuola di Matematica Computazionale”, Vico Equense, September 15-25, 1993
- “X Scuola di Matematica Computazionale”, Maratea, September 2-12, 1992
- “Corso Express”, presso ACS, Milano, December 2-4, 1992
- “Tutorial course on Domain Decomposition Methods”, Pavia University, June 11-13, 1992

## **ATTENDANCE TO NATIONAL AND INTERNATIONAL CONGRESSES**

- ICNAAM 2022, Creta (online), 19-25 September 2022
- Waves 2022, Palaiseau (Parigi), 25-29 July 2022

- FAATNA 2022, Matera, 5-8 July 2022
- ECCOMAS 2022, 8th European Congress on Computational Methods in Applied Sciences and Engineering, Oslo (Norvegia), 5-9 June 2022
- SIMAI 2020+21, XV Biannual Congress of SIMAI, Parma, 30 August-3 September 2021
- IUTAM Symposium, Tokyo (online), 15-26 June, 2-3 July 2021
- Convegno GNCS-INdAM 2020, Montecatini Terme, 11-13 Febbraio 2020
- XXI Congresso U.M.I., Pavia, 2-7 Settembre 2019
- Waves 2019, Wien (Austria), 26-30 August 2019
- NuMA 2018, Turin, 19-21 September 2018
- SIMAI 2018, XIV Biannual Congress of SIMAI, Rome, 2-6 July 2018
- IABEM 2018, Paris (France), 26-28 June 2018
- Convegno GNCS-INdAM 2018, Montecatini Terme, 14-16 Febbraio 2018
- ICNAAM 2017, Thessaloniki (Greece), 25-29 September 2017
- SIMAI 2016, XIII Biannual Congress of SIMAI, Milano, 13-16 Settembre 2016
- MAFELAP 2016, THE MATHEMATICS OF FINITE ELEMENTS AND APPLICATIONS 2016, Brunel University London (Great Britain), 14 - 17 June 2016
- ECCOMAS 2016, 7th European Congress on Computational Methods in Applied Sciences and Engineering, Crete (Greece), June 5-10, 2016
- GNCS-INdAM Congress, Montecatini Terme, February 2-4, 2016
- NETNA 2015, Falerna (Cosenza), 18-20 Giugno 2015
- SMART 2014, Pontignano (Siena), 28 September-1 October 2014
- ICNAAM 2014, Rodi (Grecia), 22-28 September 2014
- WCCM XI, Barcelona (Spain), July 20-25, 2014
- GNCS-INdAM Congress, Montecatini Terme, February 19-20, 2014
- BETEQ 2013, International Conference on Boundary Element Techniques, Paris, July 16-18 2013
- Waves 2013, Gammarth (Tunisia), June 3-7, 2013
- GNCS-INdAM Congress, Montecatini Terme, November 15-16, 2012
- ECCOMAS 2012, 6th European Congress on Computational Methods in Applied Sciences and Engineering, Wien (Austria), September 10-14, 2012
- SIMAI 2012, XI National Congress, Torino, June 25-28, 2012
- SC2011, International Conference on Scientific Computing, S. Margherita di Pula, Cagliari, October 10-14, 2011
- XIX UMI Congress, Bologna, September 12-17, 2011
- IABEM 2011, Brescia, September 5-8, 2011
- ICNAAM 2010, Rodi (Grecia), September 19-25, 2010
- X SIMAI Congress, Cagliari, June 21-25, 2010
- ECCM 2010, IV European Conference on Computational Mechanics, Paris (France), May 16-21, 2010
- CMMSE 2009, 9<sup>th</sup> International Conference on Computational and Mathematical Methods in Science and Engineering, Gijon (Spain), June 30 –July 3, 2009
- Waves 2009, Pau (France), June 15-19, 2009
- GNCS-INdAM Congress, Montecatini Terme, February 3-5, 2009
- IX SIMAI Congress, Rome, September 15-19, 2008
- GNCS-INdAM Congress, Montecatini Terme, February 4-6, 2008
- XVIII AIMETA National Congress, Brescia, September 11-14, 2007
- BETEQ 2007, International Conference on Boundary Element Techniques, Naples, July 24-26, 2007
- IABEM 2006, Symposium of the International Association for Boundary Element Methods, Graz (Austria), July 10-12, 2006
- VIII SIMAI Congress, Baia Samuele (Ragusa), May 22-26, 2006
- XVII AIMETA National Congress, Florence, September 11-15, 2005
- NAC 2005, International Conference of Numerical Analysis, Arcavacata di Rende, May 19-21, 2005
- VII SIMAI Congress, Venice, September 20-24, 2004
- ICCAM 2002, Tenth International Congress on Computational and Applied Mathematics, Leuven (Belgium), July 22-26, 2002

- IABEM 2002, Symposium of the International Association for Boundary Element Methods, Austin (Texas), May 28-30 2002
- XV AIMETA National Congress, Taormina, September 26-29, 2001
- A4A4, The Fourth International Symposium on Algorithms for Approximation, Huddersfield (UK), July 15-20, 2001
- IABEM 2000, Symposium of the International Association for Boundary Element Methods, Brescia, July 4-7, 2000
- V SIMAI National Congress, Ischia Porto, June 5-9, 2000
- IABEM International Symposium on Boundary Element Methods, Ecole Polytechnique, Palaiseau (Parigi), May 26-29, 1998
- National Congress of Numerical Analysis, Montecatini Terme, April 15-17, 1998
- IABEM Symposium: *Fundamental solutions in Boundary Elements: formulation and integration*, Seville (Spain), June 18-20, 1997
- XII AIMETA National Congress, Naples, October 3-6, 1995
- II SIMAI National Congress, Anacapri, May 31-June 3, 1994

## **SCIENTIFIC COMMUNICATIONS**

(The asterisk \* denotes personally presented talks, the circle ° invited)

- **2022\***°: “Energetic BEM for the numerical solution of 2D elastodynamics interior problems”, ICNAAM 2022
- **2022**°: “Energetic Boundary Element Method for 3D wavefield modelling”, Innsbruck Workshop 2022
- **2022**°: “Recent Advances in 2D Elastodynamics by Time-Domain Energetic Boundary Element Method”, Innsbruck Workshop 2022
- **2022**°: “Fast E-BEM by ACA compression - resolution of acoustic and elastic exterior problems”, Innsbruck Workshop 2022
- **2022**: “Recent Advances in Elastodynamics by Time-Domain Energetic Boundary Element Method”, Waves 2022
- **2022**°: “Energetic Boundary Element Method for 3D wavefield modelling”, FAATNA 2022
- **2022**°: “E-BEM for the resolution of 2D interior elastodynamic problems”, FAATNA 2022
- **2022**°: “IGA-Energetic BEM for the numerical solution of 2D wave scattering problems in the space-time domain”, FAATNA 2022
- **2022\***°: “Fast Energetic BEM for time-domain acoustic and elastic 2D scattering problems”, FAATNA 2022
- **2022**: “Algorithmic aspects of time-domain Energetic BEM for Elastodynamics”, ECCOMAS 2022
- **2022**: “Boundary Element Method for contactless estimation of spatially varying internal heat transfer coefficient in circular pipes”, UIT International Conference 2022
- **2021**: “ACA based acceleration of the Energetic Galerkin BEM for 2D acoustic and elastic wave propagation problems”, Sollerhaus Workshop, 2021
- **2021**: “ACA based acceleration of the Energetic Galerkin BEM for 2D wave propagation problems”, SIMAI 2020+21
- **2021**: “Energetic Galerkin BEM for 2D elastodynamic exterior problems with Neumann conditions: comparison between direct and indirect formulations”, SIMAI 2020+21
- **2021**: “Integral formulation for fracture propagation as a standard dissipative process: application to hydraulic fractures”, SIMAI 2020+21
- **2021\***°: “Energetic BEM for the numerical solution of exterior problems in elastodynamics”, IUTAM Symposium 2021
- **2021**: “Energetic Galerkin BEM for 2D elastodynamics: integral operators with weak and strong singularities”, BEM/MRM 44, 2021
- **2019**: “Adaptive relaxation based BEM-FEM coupling for estimating anchor losses in MEMS”, Workshop GNCS, 2019
- **2019\***°: “A kernel expansion based Energetic BEM applied to Neumann exterior wave propagation problems with damping”, Workshop “*INTEGRAL EQUATIONS: RECENT ADVANCES AND APPLICATIONS*”, 2019

- **2019\***: “Energetic BEM for elastodynamics exterior problems”, XXI Congresso U.M.I. 2019
- **2019**: “Numerical aspects of Energetic Boundary Element Method for 2D soft scattering in linear elastodynamics”, Waves 2019
- **2018**: “Integral Approach to Asian Barrier Option Pricing”, *ICNAAM 2018*
- **2018**: “Application of energetic BEM to 2D elastodynamic scattering problems”, *SIMAI 2018*
- **2018**: “BEM-FEM coupling for estimating anchor losses in MEMS”, *SIMAI 2018*
- **2018**: “A stable 2D energetic Galerkin BEM approach for linear elastodynamic problems”, *IABEM 2018*
- **2018**: “BEM-FEM coupling for estimating anchor losses in MEMS”, *IABEM 2018*
- **2018\***: “An IgA approach to Energetic BEM: preliminary results”, *DREAMS Workshop 2018*
- **2017**: “Efficient assembly based on B-spline tailored quadrature rules for the IgA-SGBEM”, *Workshop GNCS 2017*
- **2017**: “Energetic BEM for soft and hard scattering of 2D damped waves by open arcs”, *Workshop GNCS 2017*
- **2017\***: “Energetic BEM for the numerical solution of 2D damped waves propagation exterior problems”, *ICNAAM 2017*
- **2017\***: “On the Energetic Galerkin BEM and its algebraic reformulation”, *INdAM Meeting “Structured matrices in Numerical Linear Algebra: Analysis, Algorithms and Applications”*, Cortona
- **2017**: “Energetic BEM for soft and hard scattering of 2D damped waves by open arcs”, *XVII CMMSE Conference*
- **2017**: “Numerical pricing of geometric asian options with barriers”, *XVII CMMSE Conference*
- **2017**: “Platonic Solids, Restriction Matrices and Space-Time Energetic Galerkin BEM”, *Workshop “Due Giorni di Algebra Lineare Numerica”*, Como
- **2016\***: “Energetic BEM for the numerical analysis of damped wave propagation exterior problems”, *XIII SIMAI 2016 Congress*
- **2016**: “Development of a basis-oriented assembly strategy suited for isogeometric Galerkin BEMs”, *XIII SIMAI 2016 Congress*
- **2016\***: “An isogeometric approach to Symmetric Galerkin Boundary Element Method”, *MAFELAP 2016*
- **2016\***: “Energetic BEM for the numerical solution of damped wave propagation exterior problems”, *ECCOMAS 2016*
- **2016\***: “Analisi isogeometrica e metodi agli elementi di contorno”, *GNCS-INdAM 2016 Congress*
- **2015**: “Current and future developments of IGA-SGBEM”, *INdAM-GNCS Study Day, Parma*
- **2015\***: “Efficient spline alternatives to Lagrangian basis in Symmetric Galerkin BEM”, *NETNA 2015*
- **2014\***: “Isogeometric Analysis and Symmetric Galerkin BEM: a 2D numerical study”, *SMART 2014*
- **2014\***: “Energetic BEM-FEM coupling for the numerical solution of the damped wave equation”, *ICNAAM 2014*
- **2014\***: “Numerical analysis of the damped wave equation by “energetic” formulations”, *WCCM XI*
- **2014**: “Analysis of Damped Waves Using Energetic BEM-FEM Coupling”, *BeTeq 2014*
- **2014\***: “Metodi fast per la risoluzione numerica di sistemi di equazioni integro-differenziali”, *GNCS-INdAM 2014 Congress*
- **2013\***: “Energetic BEM-FEM for 2D wave propagation problems”, *IWATA 2013*
- **2013\***: “Energetic BEM-FEM coupling for wave propagation in layered media”, *BeTeq 2013*
- **2013\***: “Energetic BEM-FEM coupling for wave propagation in unbounded domains”, *Waves 2013*
- **2013**: “BEM-FEM coupling for the one-dimensional Klein-Gordon equation”, *Waves 2013*
- **2013**: “Platonic Solids, Restrictions Matrices and Space-Time Energetic Galerkin BEM”, *Waves 2013*
- **2013\***: “Accoppiamento di metodi numerici per BIEs e PDEs relative a problemi evolutivi esterni e multistrato”, *GNCS Workshop*
- **2012\***: “Accoppiamento di metodi numerici per BIEs e PDEs relative a problemi evolutivi esterni e multistrato”, *GNCS-INdAM 2012 Congress*
- **2012**: “Restriction matrices for exploiting symmetry in 3D wave propagation analysis by Energetic BEM”, *ECCOMAS 2012*
- **2012\***: “An energetic approach to BEM-FEM coupling for wave propagation phenomena”, *XI SIMAI Congress*
- **2012**: “A stable energetic Galerkin BEM for 3D wave propagation interior problems”, *XI SIMAI Congress*

- **2012\***: “An energy based BEM-FEM coupling for wave propagation problems: first results”, *Workshop “BEM on the Saar”*
- **2011\***: “On the regularization of Galerkin BEM hypersingular bilinear forms”, *SC2011*
- **2011\***: “Un metodo BEM energetico di tipo Galerkin per problemi di propagazione di onde”, *XIX UMI Congress*
- **2011**: “On the energetic Galerkin BEM applied to 3D wave propagation problems”, *IABEM 2011*
- **2011**: “Variational formulation for the energetic approach to 2D wave propagation boundary integral equations”, *IABEM 2011*
- **2011\***: “Energetic Galerkin BEM and domain decomposition for 2D wave propagation problems in multi-layered media”, *Workshop “Time Domain Boundary Integral Equations: Algorithms, Analysis, Applications”*
- **2010**: “Energetic Galerkin BEM for 2D wave propagation problems in piecewise homogeneous media”, *ICNAAM 2010*
- **2010**: “Multi-domain BEM for two dimensional problems of wave propagation”, *X SIMAI Congress*
- **2010**: “Exploiting geometrical symmetries in space-time BIEs discretization”, *ECCM 2010*
- **2009**: “Efficient numerical integration schemes for the discretization of hypersingular BIEs related to wave propagation problems”, *DWCAA09 Workshop*
- **2009**: “Numerical integration schemes for the discretization of BIEs related to wave propagation problems”, *IX CMMSE Conference*
- **2009**: “Developments in Boundary Element Methods for Wave propagation problems”, *GNCS Congress*
- **2008**: “Boundary element methods for earthquake simulations: an introduction”, *International Workshop “Advanced Numerical Methods in Seismology”*
- **2008**: “An energy approach for time-domain boundary integral formulations of the wave equation”, *IX SIMAI Congress*
- **2008**: “On analytical integrations and time marching schemes in 3D BEM elastodynamics”, *Workshop “BEM on the Saar”*
- **2008**: “A space-time energetic approach for BEM related to wave propagation analysis”, *Workshop “BEM on the Saar”*
- **2008**: “A space-time energetic approach for BEM related to wave propagation analysis in layered media”, *GNCS Congress*
- **2007\***: “An energetic space-time weak formulation for BIEs related to the wave problem”, *Workshop “Equazioni Integrali: recenti sviluppi numerici e nuove applicazioni”*
- **2007**: “Space-time variational formulations for BIEs related to the wave problem”, *XVIII AIMETA Congress*
- **2007**: “Numerical results for the wave propagation problem with space-time boundary element method”, *XVIII AIMETA Congress*
- **2007**: “Numerical results of one-dimensional wave propagation analysis in layered media”, *BETEQ 2007*
- **2007**: “Remarks on space-time variational formulations for BIEs related to the wave problem”, *BETEQ 2007*
- **2007**: “One-dimensional wave propagation analysis in layered media by BEMs”, *SIMAI Meeting 2007*
- **2006\***: “Numerical Integration Schemes for Petrov-Galerkin Infinite BEM”, *IABEM 2006 Conference*
- **2006\***: “Numerical approximation of a BGK-type relaxation model for reactive mixtures”, *VIII SIMAI Congress*
- **2006\***: “Numerical Integration Schemes for hypersingular integrals on the real line”, *VIII SIMAI Congress*
- **2005**: “BEM simulations over unbounded domains”, *XVII AIMETA National Congress*
- **2004\***: “Restriction Matrices and Panel Clustering Method for multi-domain SGBEM”, *VII SIMAI Congress*
- **2003**: “Restriction Matrices and Domain Decomposition Method for SGBEM Applications”, *XVI AIMETA National Congress*
- **2002\***: “Groups Representation Theory and Restriction Matrices”, *ICCAM X*
- **2002\***: “Restriction Matrices for SGBEM Application”, *IABEM 2002 Conference*
- **2002**: “Use of panel clustering method in numerical-analytical schemes for 3D SGBEM”, *VI SIMAI National Congress*

- **2001:** “A panel clustering algorithm for 3D SGBEM with analytical inner integrations in elasticity”, *XV AIMETA National Congress*
- **2001\*:** “Geometrical symmetry and restriction matrices”, *XV AIMETA National Congress*
- **2001\*:** “Geometrical Symmetry in Symmetric Galerkin BEM ”, International Symposium *ALGORITHMS FOR APPROXIMATION IV*
- **2000\*:** “Numerical integration in 3D Galerkin BEM solution of HBIEs”, *IABEM 2000*
- **2000\*:** “Hypersingular kernel integration in 3D Galerkin boundary element method”, *SIMAI National Congress*
- **1998\*:** “Nuovi schemi di integrazione numerica per la risoluzione di equazioni integrali (iper)singolari con il metodo di Galerkin agli elementi di contorno”, *National Congress of Numerical Analysis*
- **1998\*:** “Some results on analytical and numerical integration in 3D Galerkin BEM solution of HBIEs”, *IABEM International Symposium on Boundary Elements Method*
- **1997\*:** “Numerical integration schemes for evaluation of (hyper)singular integrals in 2D BEM”, *IABEM Workshop-Fundamental solutions in Boundary Elements: formulation and integration*
- **1995\*:** “Applications of the h-p version of symmetric boundary element method”, *XII AIMETA National Congress*
- **1994\*:** “Analisi di due algoritmi per la risoluzione in parallelo di problemi ellittici al contorno”, *II SIMAI National Congress*

## **INVITED CONFERENCES**

- **4th February 2020:** “Accurate quadrature schemes for Energetic BEM applied to 2D linear elastodynamics”, *Department of Mathematics, University of Turin*
- **27th January 2016:** “IgA-SGBEM: an overview”, *Workshop “Design of Reliable, Exact, and Application-oriented techniques for geometric Modeling and numerical Simulations (DREAMS)”*, University of Rome “Tor Vergata”
- **8th January 2014:** “Energetic BEM-FEM coupling for the numerical solution of wave propagation problems in unbounded multi-domains”, *Department of Mathematics and Computer Science, University of Florence*
- **27th May 2013:** “Energetic BEM-FEM coupling for wave propagation in unbounded media”, *MOX Seminars, Polytechnic of Milan*
- **23-25 November 2011:** “An energy approach to space-time Galerkin BEM for exterior wave propagation problems”, *INRIA, Monthly POEMS Seminars, Rocquencourt (Paris)*
- **9 September 2010:** “An energy approach to space-time Galerkin BEM for wave propagation problems”, *Workshop “Space-time Boundary Integral Equation Methods for Wave Propagation Problems”*, Torino Polytechnic

## **SCIENTIFIC PARTICIPATION / RESPONSIBILITY RELATED TO INTERNATIONAL AND NATIONAL RESEARCH PROJECTS, SELECTED FOR FUNDING ON THE BASIS OF COMPETITIVE CALLS INVOLVING PEER REVIEW**

- **GNCS 2022 (12 mesi):** “Verso nuove frontiere dell'analisi isogeometrica” (**partecipant**)
- **Unipr Incoming research and teaching Visiting Professors Program (a.y. 2020/21, 20000 Euros, responsible)**
- **FIL2020 Quota Incentivante Linea A1 (24 months, 50000 Euros):** “Time-domain Energetic BEM for elastodynamic problems, with advanced applications” (**PI**)
- **GNCS 2020 (12 months):** “Metodologie innovative per problemi di propagazione di onde in domini illimitati: aspetti teorici e computazionali” (**partecipant**)
- **MINECO 2019 (36 mesi):** “Predictive Models for Risk in Insurance and Finance”- Project granted by Spanish government - Grant code: PID2019-105986GB-C21 (**partecipant**)
- **Fondazione ACRI 2019 (8 months, 32000 Euros, responsible)**
- **Fondazione CARIPARMA 2019 (partecipant)**

- **GNCS 2019 (12 months)**: “Metodi di approssimazione locale con applicazioni all'analisi isogeometrica e alle equazioni integrali di contorno” (**participant**)
- **GNCS 2018 (12 months)**: “Sviluppo di tecniche efficienti e accurate per metodi BEM” (**participant**)
- **Fondazione CARIPARMA 2017 (responsible)**
- **GNCS 2017 (7 months)**: “Nuove tecniche numeriche per la risoluzione di problemi evolutivi mediante il metodo degli elementi di contorno” (**responsible**)
- **GNCS 2016 (12 months)**: “Approccio isogeometrico e tecniche di quadratura per il metodo agli elementi di contorno in 3D” (**participant**)
- **FIL 2014 – Quota Incentivante (12 months)**: research activity funded by UNIPR, through local call, and selected by peer review, focused on “Metodi numerici per il pricing di opzioni con barriera” (**participant**)
- **GNCS 2015 (12 months)**: “Analisi isogeometrica e metodi agli elementi di contorno” (**responsible**)
- **GNCS 2014 (12 months)**: “Dall'Approssimazione all'Algebra Lineare: metodi numerici per l'Analisi Isogeometrica” (**participant**)
- **GNCS 2013 (12 months)**: “Metodi fast per la risoluzione numerica di sistemi di equazioni integro-differenziali” (**responsible**)
- **GNCS 2012 (12 months)**: “Accoppiamento di metodi numerici per BIEs e PDEs relative a problemi evolutivi esterni e multistrato” (**responsible**)
- **GNCS 2011 (12 months)**: “Tecniche numeriche per problemi di propagazione di onde elastiche in multidomini” (**responsible**)
- **PRIN 2009 (24 months)**: “Tecniche numeriche BEM per problemi di propagazione di onde elastiche” (**participant** to Parma Unit – Local responsible: Prof. M. Diligenti)
- **PRIN 2007 (24 months)**: “Tecniche numeriche BEM per problemi di propagazione di onde elastiche” (**participant** to Parma Unit – Local responsible: Prof. M. Diligenti)
- **PRIN 2004 (24 months)**: “Teorie cinetiche in presenza di fenomeni non conservativi” (Parma Unit: resp. Prof. G. Spiga)
- **PRIN 2003 (24 months)**: “Metodi computazionali ad alta accuratezza nell'elettromagnetismo e nella modellizzazione ambientale” (**participant** to Torino Polytechnic Unit – Local responsible: Prof. G. Monegato)
- **PRIN 2000 (24 months)**: “Trattamento numerico di modelli alle derivate parziali aventi soluzioni irregolari e/o strutturate” (**participant** to Torino Polytechnic Unit – Local responsible: Prof. C. Canuto)
- **PRIN 1998 (24 months)**: “Trattamento numerico di modelli alle derivate parziali avanti soluzioni irregolari” (**participant** to Torino Polytechnic Unit – Local responsible: Prof. C. Canuto)

## **RESEARCH FELLOWSHIPS AT FOREIGN AND INTERNATIONAL HIGH QUALITY ORGANISATIONS AND RESEARCH INSTITUTES**

- 23-27 August 2022: **Unit of Engineering Mathematics, University of Innsbruck**
- 28 June - 9 July 2021: **CRM, Barcellona**
- 23 August-5 September 2020: **MFO, Oberwolfach**
- November 2011: **INRIA, Rocquencourt (Paris)**

## **EDITORIAL ACTIVITY AND ACTIVITY AS A REVIEWER**

- From 2018: member of the Editorial Board of the *Rivista di Matematica dell'Università di Parma*

I act as a Reviewer for several international scientific journals, among which:

- Annali dell'Università di Ferrara
- Applied Mathematics and Computation
- Applied Numerical Mathematics
- Communications in Nonlinear Sciences and Numerical Simulation
- Computational Mechanics
- Computer Methods in Applied Mechanics and Engineering

- CMES: Computer Modeling in Engineering and Sciences
- Computer Physics Communications
- Computers and Mathematics with Applications
- Engineering Analysis with Boundary Elements
- International Journal for Numerical Methods in Engineering
- International Journal of Computational Methods
- Journal of Computational and Applied Mathematics
- Journal of Computational Methods in Sciences and Engineering
- Journal of Integral Equations and Applications
- Journal of Scientific Computing
- Linear Algebra and its Applications
- Mathematical Methods in the Applied Sciences
- Mediterranean Journal of Mathematics
- Numerical Algorithms
- Rendiconti del Seminario Matematico Università e Politecnico di Torino
- Rivista di Matematica dell'Università di Parma
- SIAM Journal of Scientific Computing
- Springer INdAM Series

I'm also a Reviewer for

- Mathematical Review

## **MAIN RESEARCH TOPICS**

- Energetic BEM and BEM-FEM coupling for acoustic and elastic wave propagation problems in time domain
- SGBEM and IgA-SGBEM for elliptic problems
- Quadrature schemes for weakly, strongly and hyper-singular integrals
- Collocation BEM for market options pricing

## **SCIENTIFIC PRODUCTION**

Research papers (on Scientific Journals or Books with peer review process):

[61AR] **A.Aimi, L.Desiderio, G.Di Credico**: “Partially pivoted ACA based acceleration of the energetic BEM for time-domain acoustic and elastic waves exterior problems”, *CAMWA*, **119**, 351–370, (2022)

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- [82AC] **A. Aimi, G. Di Credico, C. Guardasoni, G. Speroni**: “Energetic BEM for the numerical solution of 2D elastodynamics interior problems”, Book of Abstracts *ICNAAM 2022*, p. 1, (2022)
- [81AC] **A. Aimi, S. Dallospedale, L. Desiderio, H. Gimperlein, C. Guardasoni**: “Energetic Boundary Element Method for 3D wavefield modelling”, Book of Abstracts *Innsbruck Workshop*, 1 p., (2022)
- [80AC] **A. Aimi, G. Di Credico, H. Gimperlein, G. Speroni, C. Guardasoni**: “Recent Advances in 2D Elastodynamics by Time-Domain Energetic Boundary Element Method”, Book of Abstracts *Innsbruck Workshop*, 1 p., (2022)
- [79AC] **A. Aimi, L. Desiderio, G. Di Credico**: “Fast E-BEM by ACA compression - resolution of acoustic and elastic exterior problems”, Book of Abstracts *Innsbruck Workshop*, 1 p., (2022)
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- [73AC] **A. Aimi, L. Desiderio, G. Di Credico**: “Fast Energetic BEM for time-domain acoustic and elastic 2D scattering problems”, Book of Abstract *FAATNA 2022*, 1 p., (2022)
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- [29AC] **A.Aimi, M.Diligenti, C.Guardasoni:** “Efficient numerical integration schemes for the discretization of hypersingular BIEs related to wave propagation problems”, *Book of Abstracts DWCAA09*, 64, (2009)
- [28AC] **A.Aimi, M.Diligenti, C.Guardasoni:** “Numerical integration schemes for the discretization of BIEs related to wave propagation problems”, *Proceedings of IX CMMSE Conference*, J.Vigo-Aguiar (Ed.), Volume I, 45-56, (2009)
- [27AC] **A.Aimi, M.Diligenti, C.Guardasoni, I.Mazzieri, S.Panizzi:** “An energy approach for time-domain boundary integral formulations of the wave equation”, *Book of Abstracts IX SIMAI Congress*, 1 p., (2008)
- [26AC] **A.Aimi, C.Guardasoni, S.Panizzi:** “One-dimensional wave propagation analysis in layered media by BEMs”, *Book of Abstract of the SIMAI Meeting on “Perspective on Development of the Applied Mathematics in Italy*, 1p., (2007)
- [25AC] **A.Aimi, M.Diligenti, C.Guardasoni:** “Numerical results for the wave propagation problem with space-time boundary element method”, *Atti XVIII Congresso AIMETA*, , CD-rom, 12 pp., (2007)
- [24AC] **A.Aimi, A.Carini, M.Diligenti, S.Panizzi, A.Salvadori:** “Space-time variational formulations for BIEs related to the wave problem”, *Atti XVIII Congresso AIMETA*, CD-rom, 11 pp., (2007)
- [23AC] **A.Aimi, A.Carini, M.Diligenti, C.Guardasoni:** “Numerical results of one-dimensional wave propagation analysis in layered media”, *BETEQ 2007 Proceedings*, 6 pp., (2007)

- [22AC] **A.Aimi, S.Panizzi, A.Carini, M.Diligenti:** “Remarks on space-time variational formulations for BIEs related to the wave problem”, *BETEQ 2007 Proceedings*, 6 pp., (2007)
- [21AC] **A.Aimi, M.Diligenti:** “Numerical Integration Schemes for Petrov-Galerkin Infinite BEM”, *Book of Abstracts, IABEM 2006 Conference*, 297-300, (2006)
- [20AC] **A.Aimi, M.Diligenti, M.Groppi, C.Guardasoni:** “Numerical approximation of a BGK-type relaxation model for reactive mixtures”, *Extended Abstracts VIII Congresso SIMAI*, CD Rom, 4 pp., (2006)
- [19AC] **A.Aimi, M.Diligenti:** “Numerical Integration Schemes for hypersingular integrals on the real line”, *Extended Abstracts VIII Congresso SIMAI*, CD Rom, 4 pp., (2006)
- [18AC] **A.Aimi, A.Carini, M.Diligenti, A.Feriani, A.Salvadori:** “BEM simulations over unbounded domains”, *Atti XVII Congresso Nazionale AIMETA*, CD-rom, 10 pp., (2005)
- [17AC] **A.Aimi, M.Diligenti, F.Freddi:** “Softening cohesive interface problems: solution via Boundary Element Method”, *Poster, NAC 2005*, (2005)
- [16AC] **A.Aimi, M.Diligenti, A.Salvadori:** “Restriction Matrices and Panel Clustering Method for multi-domain SGBEM”, *Sommari VII Congresso SIMAI*, 1 p., (2004)
- [15AC] **A.Aimi, M.Diligenti, F.Freddi, F.Lunardini:** “Restriction Matrices and Domain Decomposition Method for SGBEM Applications”, *Atti XVI Congresso Nazionale AIMETA*, 1 p., (2003)
- [14AC] **A.Aimi, M.Diligenti:** “Groups Representation Theory and Restriction Matrices”, *Abstracts of Talks, ICCAM X*, 1 p., (2002)
- [13AC] **A.Aimi, M.Diligenti, F.Freddi, A.Salvadori:** “Restriction Matrices for SGBEM Application”, *Extended Abstracts IABEM 2002*, 12 pp., (2002)
- [12AC] **A.Aimi, M.Diligenti, F.Lunardini, A.Salvadori:** “Use of panel clustering method in numerical-analytical schemes for 3D SGBEM”, *Sommari VI Congresso Nazionale SIMAI*, 1 p., (2002)
- [11AC] **A.Aimi, M.Diligenti:** “Geometrical Symmetry in Symmetric Galerkin BEM”, in J.Levesley, I.Anderson, J.C.Mason (eds.): *Algorithms for Approximation IV*, The University of Huddersfield, 78-85, (2002)
- [10AC] **A.Aimi, M.Diligenti, F.Lunardini, A.Salvadori:** “A panel clustering algorithm for 3D SGBEM with analytical inner integrations in elasticity”, *Atti XV Congresso Nazionale AIMETA*, 2 pp., (2001)
- [9AC] **A.Aimi, M.Diligenti:** “Geometrical symmetry and restriction matrices”, *Atti XV Congresso Nazionale AIMETA*, CD-rom, 10 pp., (2001)
- [8AC] **A.Aimi, M.Diligenti:** “Geometrical Symmetry in Symmetric Galerkin BEM”, *Proceedings of ALGORITHMS FOR APPROXIMATION IV*, University of Huddersfield, 19-20, (2001)
- [7AC] **A.Aimi, M.Diligenti:** “Numerical integration in 3D Galerkin BEM solution of HBIEs”, *Extended Abstracts IABEM 2000*, 5-8, (2000)
- [6AC] **A.Aimi, M.Diligenti:** “Hypersingular kernel integration in 3D Galerkin boundary element method”, *Sommari V Congresso Nazionale SIMAI*, 679-682, (2000)
- [5AC] **A.Aimi:** “Nuovi schemi di integrazione numerica per la risoluzione di equazioni integrali (iper)singolari con il metodo di Galerkin agli elementi di contorno”, *Sommari Convegno Nazionale di Analisi Numerica*, 11-12, (1998)

[4AC] **A.Aimi, A.Carini, M.Diligenti, A.Salvadori:** “Some results on analytical and numerical integration in 3D Galerkin BEM solution of HBIEs”, *Proceedings of the IABEM International Symposium on Boundary Elements Methods*, 57-58, (1998)

[3AC] **A.Aimi, A.Carini, M.Diligenti:** “Numerical integration schemes for evaluation of (hyper)singular integrals in 2D BEM”, in F.G.Benitez (ed.): *IABEM Workshop-Fundamental solutions in Boundary Elements: formulation and integration*, 185-204, (1997)

[2AC] **A.Aimi, A.Carini, M.Diligenti:** “Applications of the h-p version of symmetric boundary element method”, *Atti XII Congresso Nazionale AIMETA, Meccanica delle Strutture, Tomo 1*, 25-30, (1995)

[1AC] **A.Aimi, G. Di Cola, M.Diligenti:** “Analisi di due algoritmi per la risoluzione in parallelo di problemi ellittici al contorno”, *Sommari II Congresso Nazionale SIMAI*, 346-348, (1994)

#### Technical Reports:

[17RT] **A.Aimi, M.Diligenti, M.Laurini:** "Fast Multipole Boundary Element Method: Applications to 2D Elliptic Problems", *Quaderni Dip. Mat. Univ. Parma*, n.523, 1-29, (2015)

[16RT] **A.Aimi, S.Panizzi:** "On the regularization of bilinear forms with hypersingular kernel", *Quaderni Dip. Mat. Univ. Parma*, n.506, 1-32, (2012)

[15RT] **A.Aimi, M.Diligenti, M.Manzini:** "Efficient generation of restriction matrices for exploiting partial or complete symmetries in 2D and 3D problems", *Quaderni Dip. Mat. Univ. Parma*, n.504, 1-30, (2011)

[14RT] **A.Aimi, M.Diligenti, C.Guardasoni:** "Numerical integration schemes for the Galerkin BEM related to wave propagation problems", *Quaderni Dip. Mat. Univ. Parma*, n.495, 1-34, (2009)

[13RT] **A.Aimi, M.Diligenti, C.Guardasoni, I.Mazzieri, S.Panizzi:** “An energy approach to space-time Galerkin BEM for wave propagation problems”, *Quaderni Dip. Mat. Univ. Parma*, n.487, 1-34, (2008)

[12RT] **A.Aimi, M.Diligenti, S.Panizzi:** “Weak and variational formulations for BIEs related to the wave equation”, *Quaderni Dip. Mat. Univ. Parma*, n.464, 1-19, (2007)

[11RT] **A.Aimi, M.Diligenti:** “One-dimensional wave propagation analysis in layered media by BEMs”, *Quaderni Dip. Mat. Univ. Parma*, n.462, 1-22, (2007)

[10RT] **A.Aimi, M.Diligenti:** “Numerical integration schemes for hypersingular integrals on the real line”, *Quaderni Dip. Mat. Univ. Parma*, n.439, 1-14, (2006)

[9RT] **A.Aimi, M.Anelli, M.Diligenti:** “ Formulazione del metodo di Galerkin simmetrico per equazioni integrali di contorno per problemi con interfaccia”, *Quaderni Dip. Mat. Univ. Parma*, n.416, 1-21, (2005)

[8RT] **A.Aimi, M.Diligenti, F.Lunardini:** “A symmetry adapted panel clustering technique for SGBEM”, *Quaderni Dip. Mat. Univ. Parma*, n.331, 1-27, (2003)

[7RT] **A.Aimi, F.Lunardini:** “Coupling panel clustering with inner analytical integrations in Galerkin BEM”, *Quaderni Dip. Mat. Univ. Parma*, n.275, 1-15, (2002)

[6RT] **A.Aimi, L.Bassotti, M.Diligenti:** “Gruppi di congruenze e matrici di restrizione”, *Quaderni Dip. Mat. Univ. Parma*, n.261, 1-20, (2001)

[5RT] **A.Aimi, L.Bassotti, M.Diligenti:** “Un metodo di decomposizione per sistemi finiti di funzioni invarianti rispetto ad un gruppo di congruenze”, *Quaderni Dip. Mat. Univ. Parma*, n.247, 1-18, (2000)

[4RT] **A.Aimi, M.Diligenti:** “Integral evaluation of (hyper)singular Galerkin type boundary element integrals for 3D problems”, *Quaderni Dip. Mat. Univ. Parma*, n.219, 1-30, (2000)

[3RT] **A.Aimi:** “Costruzione di sottospazi dello spazio di elementi finiti triangolari su poligoni regolari”, *Quaderni Dip. Mat. Univ. Parma*, n.136, 1-11, (1996)

[2RT] **G.Lupatini, A.Aimi:** “Un algoritmo parallelo per la generazione di quadtree relativi a figure piane”, *Atti Dip. Ing. Meccanica Univ. Brescia*, n.39, 1-21, (1994)

[1RT] **A.Aimi:** “Alcune applicazioni del sistema Express nella programmazione parallela su transputers”, *Atti Dip. Ing. Meccanica Univ. Brescia*, n.31, 1-52, (1993)

#### Curatele:

[3C] **A.Aimi, M.Bisi, M.Diligenti, M.Groppi, C.Guardasoni, S.Sanfelici:** Proceedings of SIMAI 2020+21, the XV biannual congress of SIMAI”, Univ. Parma, 30 August-3 September 2021, (2021)

[2C] **A.Aimi, M.Diligenti:** Atti del Convegno “Integral Equations: recent numerical developments and new applications”, Dip. Mat., Univ. Parma, 29-30 Ottobre 2009, *Riv. Mat. Univ. Parma*, **2**, (2011)

[1C] **A.Aimi, M.Diligenti:** Atti del Convegno “Equazioni Integrali: recenti sviluppi numerici e nuove applicazioni”, Dip. Mat., Univ. Parma, 27-28 Settembre 2007, *Riv. Mat. Univ. Parma*, (7) **8**, (2008)

#### Thesis:

[2T] **A.Aimi:** “New numerical integration schemes for the solution of (hyper)singular integral equations with Galerkin BEM”, PhD Thesis, Univ. Milano, (1998)

[1T] **A.Aimi:** ”Un’applicazione del metodo degli invarianti ortogonali all’operatore dell’elasticità in un rettangolo”, Degree Thesis, Univ. Parma, (1990)

### **TEACHING ACTIVITY**

- **a.a. 2021/22:**
  - **course** of *Numerical Analysis (12 CFU)*, Bachelor Program in Mathematics ,Univ. Parma
  - **course** of *Numerical Mathematics (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **course** of *Informatics (1 CFU)*, English language, Master Degree Program in Veterinary Medicine, Univ. Parma
  - **course** of *Numerical Methods for Boundary Integral Equations (6 CFU)*, PhD Program in Mathematics, Univ. Parma
  
- **a.a. 2020/21:**
  - **intensive summer course** of *Numerical Analysis: An introduction to the Boundary Element Method (36 hours, 19 July-13 August)*, SMI (International Mathematics School), Univ. Perugia
  - **course** of *Numerical Analysis (12 CFU)*, Bachelor Program in Mathematics ,Univ. Parma
  - **course** of *Numerical Mathematics (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **course** of *Informatics (1 CFU)*, English language, Master Degree Program in Veterinary Medicine, Univ. Parma
  - **course** of *Numerical Methods for Boundary Integral Equations (6 CFU)*, PhD Program in Mathematics, Univ. Parma
  
- **a.a. 2019/20:**

- **course** of *Numerical Analysis (12 CFU)*, Bachelor Program in Mathematics ,Univ. Parma
- **course** of *Numerical Mathematics (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
- **course** of *Basic Mathematics applied to the biomedical Sciences (5 CFU)*, Bachelor Program in Livestock Science and Animal Production Technologies, Univ. Parma
  
- **a.a. 2018/19:**
  - **course** of *Numerical Mathematics (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **course** of *Basic Mathematics applied to the biomedical Sciences (5 CFU)*, Bachelor Program in Livestock Science and Animal Production Technologies, Univ. Parma
  - **course** of *Numerical Methods for Boundary Integral Equations (3 CFU)*, PhD Program in Mathematics, Univ. Parma
  
- **a.a. 2017/18:**
  - **course** of *Numerical Mathematics (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **course** of *Basic Mathematics applied to the biomedical Sciences (5 CFU)*, Bachelor Program in Livestock Science and Animal Production Technologies, Univ. Parma
  
- **a.a. 2016/17:**
  - **course** of *Numerical Mathematics (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **course** of *Basic Mathematics applied to the biomedical Sciences (5 CFU)*, Bachelor Program in Livestock Science and Animal Production Technologies, Univ. Parma
  - **course** of *Numerical Methods for Boundary Integral Equations (3 CFU)*, PhD Program in Mathematics, Univ. Parma
  
- **a.a. 2015/16:**
  - **course** of *Numerical Mathematics (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **course** of *Basic Mathematics applied to the biomedical Sciences (5 CFU)*, Bachelor Program in Livestock Science and Animal Production Technologies, Univ. Parma
  
- **a.a. 2014/15:**
  - **course** of *Numerical Mathematics (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **course** of *Numerical Methods for Differential and Integral Equations (6 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **course** of *Basic Mathematics applied to the biomedical Sciences (5 CFU)*, Bachelor Program in Livestock Science and Animal Production Technologies, Univ. Parma
  
- **a.a. 2013/14:**
  - **course** of *Numerical Models and Methods (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **exercise course** of *Numerical Analysis*, Bachelor Program in Mathematics and Bachelor Program in Computer Science, Univ. Parma
  
- **a.a. 2012/13:**
  - **course** of *Numerical Models and Methods (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **exercise course** of *Numerical Analysis*, Bachelor Program in Mathematics and Bachelor Program in Computer Science, Univ. Parma
  
- **a.a. 2011/12:**
  - **course** of *Numerical Models and Methods (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **course** of *Numerical Methods for Integral Equations (3 CFU)*, PhD Program in Pure and Applied Mathematics, Univ. Parma
  - **exercise course** of *Numerical Analysis*, Bachelor Program in Mathematics and Bachelor Program in Computer Science, Univ. Parma
  - **exercise course** of *Approximation Methods*, Master Degree Program in Mathematics, Univ. Parma

- **a.a. 2010/11:**
  - **exercise course** of *Numerical Analysis*, Bachelor Program in Mathematics and Bachelor Program in Computer Science, Univ. Parma
  - **exercise course** of *Numerical Mathematics*, Master Degree Program in Mathematics, Univ. Parma
  - **exercise course** of *Approximation Methods*, Master Degree Program in Mathematics, Univ. Parma
  
- **a.a. 2009/10:**
  - **course** of *Numerical Mathematics (9 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **course** of *Numerical Methods for Integral Equations (6 CFU)*, Master Degree Program in Mathematics, Univ. Parma
  - **course** of *Numerical Analysis Lab (3 CFU)*, Bachelor Program in Computer Science, Univ. Parma
  - **exercise course** of *Numerical Analysis 1*, Bachelor Program in Mathematics, Univ. Parma
  
- **a.a. 2008/09:**
  - **course** of *Approximation Methods (6 CFU)*, Master Degree Program in Pure and Applied Mathematics, Univ. Parma
  - **course** of *Numerical Methods for Integral Equations (6 CFU)*, Master Degree Program in Pure and Applied Mathematics, Univ. Parma
  - **course** of *Numerical Analysis Lab (3 CFU)*, Bachelor Program in Computer Science, Univ. Parma
  - **exercise course** of *Numerical Analysis 1*, Bachelor Program in Mathematics, Univ. Parma
  
- **a.a. 2007/08:**
  - **course** of *Numerical Analysis 2 (6 CFU)*, Bachelor Program in Mathematics, Univ. Parma
  - **course** of *Approximation Methods (6 CFU)*, Master Degree Program in Pure and Applied Mathematics, Univ. Parma
  - **course** of *Numerical Methods for Integral Equations (6 CFU)*, Master Degree Program in Pure and Applied Mathematics, Univ. Parma
  - **course** of *Numerical Analysis A (5 CFU)*, Master Degree Program in Environmental Engineering, Univ. Parma
  - **course** of *Numerical Analysis Lab (3 CFU)*, Bachelor Program in Computer Science, Univ. Parma
  - **exercise course** of *Numerical Analysis 1*, Bachelor Program in Mathematics, Univ. Parma
  
- **a.a. 2006/07:**
  - **course** of *Approximation Methods (6 CFU)*, Master Degree Program in Pure and Applied Mathematics, Univ. Parma
  - **course** of *Numerical Methods for Integral Equations (6 CFU)*, Master Degree Program in Pure and Applied Mathematics, Univ. Parma
  - **course** of *Elements of Numerical Analysis (5 CFU)*, Master Degree Program in TLC Engineering, Univ. Parma
  - **exercise course** of *Numerical Analysis 1*, Bachelor Program in Mathematics, Univ. Parma
  - **exercise course** of *Numerical Analysis Lab*, Bachelor Program in Mathematics, Univ. Parma
  
- **a.a. 2005/06:**
  - **course** of *Approximation Methods (6 CFU)*, Master Degree Program in Pure and Applied Mathematics, Univ. Parma
  - **course** of *Elements of Numerical Analysis (5 CFU)*, Master Degree Program in TLC Engineering, Univ. Parma
  - **exercise course** of *Numerical Analysis 1*, Bachelor Program in Mathematics, Univ. Parma
  - **exercise course** of *Numerical Analysis 2*, Bachelor Program in Mathematics, Univ. Parma
  
- **a.a. 2004/05:**
  - **course** of *Numerical Analysis 2 (6 CFU)*, Bachelor Program in Mathematics, Univ. Parma
  - **course** of *Elements of Numerical Analysis (5 CFU)*, Master Degree Program in TLC Engineering, Univ. Parma
  - **exercise course** of *Numerical Analysis 1*, Bachelor Program in Mathematics, Univ. Parma

- **a.a. 2003/04:**
  - **course** of *Numerical Analysis 1 (6 CFU)*, Bachelor Program in Mathematics, Bachelor Program in Computer Science, Univ. Parma
  - **course** of *Numerical Analysis Lab (3 CFU)*, Bachelor Program in Mathematics, Bachelor Program in Computer Science, Univ. Parma
- **a.a. 2002/03:**
  - **course** of *Numerical Analysis 2 (6 CFU)*, C.L. in Mathematics, Univ. Parma
  - **course** of *Numerical Analysis Lab (3 CFU)*, C.L. in Mathematics, Univ. Parma
  - **exercise course** of *Numerical Analysis 1*, C.L. in Mathematics, Univ. Parma
- **a.a. 2001/02:**
  - **course** of *Numerical Analysis II*, Bachelor Program in Mathematics, Univ. Parma
  - **course** of *Numerical Analysis Lab*, Bachelor Program in Mathematics, Univ. Parma
  - **exercise course** of *Numerical Analysis I*, Bachelor Program in Mathematics, Univ. Parma
  - **exercise course** of *Approximation Methods*, Bachelor Program in Mathematics, Univ. Parma
- **a.a. 2000/01:**
  - **course** of *Approximation Methods*, Bachelor Program in Mathematics, Univ. Parma
  - **exercise and lab course** of *Numerical Analysis*, Bachelor Program in Mathematics, Univ. Parma
- **a.a. 1999/00:**
  - **exercise and lab course** of *Numerical Analysis*, Bachelor Program in Mathematics, Univ. Parma
- **a.a. 1998/99:**
  - **exercise and lab course** of *Numerical Analysis*, Bachelor Program in Mathematics, Univ. Parma
  - **exercise course** of *Approximation Methods*, Bachelor Program in Mathematics, Univ. Parma
- **a.a. 1997/98:**
  - **exercise and lab course** of *Numerical Analysis*, Bachelor Program in Mathematics, Univ. Parma
  - **exercise course** of *Approximation Methods*, Bachelor Program in Mathematics, Univ. Parma
- **a.a. 1994/95:**
  - **course** of *Numerical Analysis and Numerical Programming*, Bachelor Program in Civil Engineering, Univ. Parma
  - **exercise course** of *Numerical Analysis*, Bachelor Program in Mechanical Engineering, Univ. Brescia
  - **exercise course** of *Mathematical Analysis I*, Bachelor Program in Methods in Physics, Univ. Parma
- **a.a. 1993/94:**
  - **course** of *Numerical Analysis and Numerical Programming*, Bachelor Program in Civil Engineering, Univ. Parma
  - **exercise course** of *Numerical Analysis*, Bachelor Program in Mechanical Engineering, Univ. Brescia
  - **exercise course** of *Numerical Analysis*, Bachelor Program in Computer Science Engineering, Univ. Parma
- **a.a. 1992/93:**
  - **course** of *Numerical Analysis and Numerical Programming*, Bachelor Program in Civil Engineering, Univ. Parma
  - **exercise course** of *Numerical Analysis*, Bachelor Program in Mechanical Engineering, Univ. Brescia
- **a.a. 1991/92:**
  - **exercise course** of *Numerical Analysis*, Bachelor Program in Mechanical Engineering, Univ. Brescia

Further:

- **Supervisor of 23 Degree Thesis** (Bs, Ms) in Numerical Analysis at the University of Parma
- **Co-supervisor of 11 Degree Thesis** in Numerical Analysis at the University of Parma and at the University of Brescia.
- **Advisor** of Giulia Di Credico **PhD thesis** in Mathematics (XXXIV cycle)
- Among my master degree thesis students:
  - Ilario Mazzieri, Associate Professor at Mox, Politecnico di Milano
  - Silvia Gazzola, Assistant Professor at Mathematical Sciences Department, University of Bath
  - Luca Desiderio, PhD at UMA-ENSTA-PARISTECH, Ecole Polytechnique, Paris, and currently Assistant Professor at DSMFI, University of Parma

## **ORGANIZING ACTIVITIES**

- **5-9 July 2022** : Member of the Scientific Committee of FAATNA 2020 international conference, Matera
- **5-9 July 2022** : : Member of the Organizing Committee of the Minisymposium: “*Theoretical aspects of Isogeometric Analysis and recent applications*”, FAATNA 2020 international conference, Matera
- **August 30-September 3 2021** : Member of the Organizing Committee of SIMAI2020+2021 Conference, University of Parma
- **30 Agosto-3 Settembre 2021**:: Responsible of the Organizing Committee of the Minisymposium: “*Numerical methods for integral equations and applications*”, XV SIMAI Congress, Parma.
- **July 2<sup>nd</sup>-6<sup>th</sup>, 2018**: Member of the Organizing Committee of the Minisymposium: “*Numerical methods for integral equations and applications*”, XIV SIMAI Congress, Roma.
- **October 26<sup>th</sup>-27<sup>th</sup>, 2017**: Responsible of the Organizing Committee of the *Workshop* related to Project INdAM-GNCS 2017 “*Nuove tecniche numeriche per la risoluzione di problemi evolutivi mediante il metodo degli elementi di contorno*”, DSMFI, University of Parma.
- **September 13<sup>th</sup>-16<sup>th</sup>, 2016**: Member of the Organizing Committee of the Minisymposium: “*Applications and numerical methods for Integral Equations:*”, XIII SIMAI Congress, Milano.
- **September 17<sup>th</sup>, 2015**: Responsible for the Organizing Committee of the scientific day related to Project INdAM-GNCS 2015 “*Analisi isogeometrica e metodi agli elementi di contorno*”, Parma University.
- **February 18<sup>th</sup> -19<sup>th</sup> 2013**: Member of the Organizing Committee of the *scientific days* concluding Project INdAM-GNCS 2012 “*Accoppiamento di metodi numerici per BIEs e PDEs relative a problemi evolutivi esterni e multiestrato*”, Politecnico di Torino.
- **June 25<sup>th</sup> -28<sup>th</sup>, 2012**: Responsible for the Organizing Committee of the Minisymposium: “*Integral Equations: numerical methods and applications*”, XI SIMAI Congress, Torino.
- **January 31<sup>st</sup> 2011**: Responsible for the Organizing Committee of the *scientific day* concluding Project INdAM-GNCS 2011 “*Tecniche numeriche per problemi di propagazione di onde elastiche in multidomini*”, Parma University.
- **October 29<sup>th</sup> -30<sup>th</sup>, 2009**: Responsible for the Organizing Committee of the Workshop “*Integral Equations: recent numerical developments and new applications*”, Parma University
- **September 27<sup>th</sup> -28<sup>th</sup>, 2007**: Member of the Organizing Committee of the Workshop “*Equazioni Integrali: recenti sviluppi numerici e nuove applicazioni*”, Parma University
- **December 6<sup>th</sup>, 2002**: Member of the Organizing Committee of the Scientific Day in honour of Prof. Lucilla Bassotti Rizza, Parma University
- **July 4<sup>th</sup> -7<sup>th</sup>, 2000**: Member of the Local Organizing Committee of IABEM 2000: Symposium of the International Association for Boundary Element Methods, Brescia University

## **OTHER ACTIVITIES**

- **Since 2021**: Member of the Scientific Committee of Area 101 of Parma University, for the evaluation of Mathematics and Computer Science Department Research

- **Since 2019:** Member of Department Quality Assurance Committee
- **2014-2021:** Secretary of the Scientific Committee of Area 101 of Parma University, for the evaluation of Mathematics and Computer Science Department Research
- **2011-2016:** Member of the Scientific Committee of the PhD School in Science and Technology of Parma University
- **2008-2010:** Secretary of the Scientific Committee of Area 101 of Parma University, for the evaluation of Mathematics Department Research
  
- **Since 2013:** Member of the Teachers of the PhD Course in Mathematics of Ferrara, Modena e Reggio Emilia, Parma University Consortium
- **2011-2013:** Member of the Teachers of the PhD Course in Pure and Applied Mathematics of Parma University
  
- **Since 2014:** Responsible for the Quality Assurance of the Master degree courses in Mathematics
- **Since 2013:** Member of the Group for the Self-Evaluation of Teaching Activities for the Master degree courses in Mathematics
- **Since 2010:** Member of the Teaching Committee for the Master degree courses in Mathematics
  
- **2010-2016:** Member of the Teaching Committee for the Bachelor's degree courses in Mathematics
- **2014-2016:** Responsible for the Quality Assurance of the Bachelor's degree courses in Mathematics
- **2013-2016:** Member of the Group for the Self-Evaluation of Teaching Activities for the Bachelor's degree courses in Mathematics
  
- **Since 2006:** Member of the Library Scientific Committee of Mathematics Department
- **2002-2005:** Member of Mathematics Department Advisory Committee

## **PARTICIPATION TO NATIONAL/INTERNATIONAL COMMITTEES**

- **7 January 2022:** Member of the Judging Committee for three Research grants in Computer Sciences and Numerical Analysis at Mathematical, Physical and Computer Science Department, University of Parma
- **February-March 2021:** Member of the Judging Committee for an Associate Professor position in Numerical Analysis (L.240/2010) at Politecnico di Torino
- **25 February 2021:** Member of the international Committee for the assignment of Ph.D. title at TU Graz (Austria)
- **November-December 2019:** Member of the Judging Committee in a Competitive Examination for an Assistant Professor position RTD a) L.240/2010 in Numerical Analysis at University of Parma
- **September 2019:** Member of the Judging Committee in a Competitive Examination for an Assistant Professor position RTD b) L.240/2010 in Numerical Analysis at Politecnico di Milano
- **June 2019:** Member of the Judging Committee for the recruitment of a Technician Physician at Mathematical, Physical and Computer Science Department, University of Parma
- **28 May 2019:** President of the Committee for the assignment of Ph.D. title in Applied Mathematics at Mathematics, Computer Science and Economics Department, University of Basilicata
- **26 July 2018:** Member of the Judging Committee in a Competitive examination for an INdAM Research Fellow Position in the framework of FOE 2014 – SUNRISE Research Project – at Mathematics and Computer Science Department, University of Florence

- **27 January 2017:** Member of the international Committee for the assignment of Ph.D. title in Applied Mathematics at INRIA-UMA-ENSTA-PARISTECH, Ecole Polytechnique (Paris)

- **February-April 2008:** Member of the Judging Committee in a Competitive Examination for an Assistant Professor position in Numerical Analysis at Politecnico di Milano

Parma, 03/08/2022