

CURRICULUM VITAE OF MICHELE PIANA

Current positions

- Professor, Numerical Analysis, Dipartimento di Matematica, Università di Genova
- Associate Researcher, CNR - SPIN, Genova
- Principal Investigator, MIDA - Methods for Image and Data Analysis, Dipartimento di Matematica, Università di Genova and CNR - SPIN, Genova
- Scientific Director, LISCOMPlab - Life Sciences Computational Laboratory, Università di Genova and Ospedale Policlinico San Martino IRCCS, Genova

Previous positions

- Associate Professor, Numerical Analysis, Dipartimento di Matematica, Università di Genova (2009-2013)

- Associate Professor, Computer Science, Dipartimento di Informatica, Università di Verona (2005-2009)
- Ricercatore, Numerical Analysis, Dipartimento di Matematica, Università di Genova (2001-2005)
- Ricercatore, Cybernetics and Signal Processing, Istituto Nazionale di Fisica della Materia (1999-2001)
- Post-doc, Cybernetics and Signal Processing, Istituto Nazionale di Fisica della Materia (1998-1999)
- Research Scholar, Department of Mathematical Sciences, University of Delaware (1997-1998)

Visiting positions

- Institute for Data Science (former Institute for 4D Technologies), Fachhochschule Nordwestschweiz (several short visiting periods since 2010)
- NASA Goddard Space Flight Center (several short visiting periods since 2006)
- Brain Research Unit, Low Temperature Laboratory, Helsinki University of Technology (Summer 2002, February 2002, November 2005)
- Department of Mathematical Sciences, University of Delaware (Fall 2002)
- Department of Physics and Astronomy, University of Glasgow (Summer 1995, January 2001, January 2002)

Honors and recognitions

- EJNMMI Research Best Paper 2021

- Supervisor of the PhD Thesis *Inverse Problems in data-driven multi-scale Systems Medicine: application to cancer physiology* (M. Scussolini, Dipartimento di Matematica, Università di Genova), finalist of the *European Community on Computational Methods in Applied Sciences (ECCOMAS) PhD Thesis Award 2019*
- Inverse Problems Poster Prize at IPTA 2014, Bristol, UK
- NASA Group Achievement Award, The RHESSI Team, NASA Goddard Space Flight Center
- Honorary Research Fellow, Department of Physics and Astronomy, University of Glasgow
- Co-author of the paper: Sorrentino A, Parkkonen L and Piana M 2007 Particle filters: a new method for reconstructing multiple current dipoles from MEG data *New Frontiers in Biomagnetism: Prog. Biomag.* 2006 1300 173 awarded with the *Best Young Investigator Award*, Biomag 2006, Vancouver, Canada
- Supervisor of the PhD Thesis *Regularization Methods for the Solution of Inverse Problems in Solar Plasma Physics* (M. Prato, Dipartimento di Matematica, Università di Genova), finalist of the *European Community on Computational Methods in Applied Sciences (ECCOMAS) PhD Thesis Award 2006*
- Supervisor of the PhD Thesis *PFM: Particle Filters for Magnetoencephalography* (A. Sorrentino, Dipartimento di Fisica, Università di Genova), finalist of the *European Community on Computational Methods in Applied Sciences (ECCOMAS) PhD Thesis Award 2007*

Professional activities

- Member of the Board of Directors, Società Italiana per la Matematica Applicata e Industriale (SIMAI) (2020 - present)
- Member of the Selection Committee, *Attività di Studio della Comunità Nazionale dello Space Weather per il Popolamento del Prototipo di Centro Dati Scientifico ASPIS*, Agenzia Spaziale Italiana (2021 - present)

- Co-Investigator for the ESA mission *Spectrometer/Telescope for Imaging X-rays (STIX)* (2012 - present)
- Co-Investigator for the *Hard X-ray Imager (HXI)* mission on-board the ASO-S satellite (2020 – present)
- *Rapporteur* for the Key Orientation Area *Globally Competitive Space Sector*, APRE for Horizon Europe
- Member of the panel of the PhD Program in Mathematics and Applications, Università di Genova (2004 - present)
- Member of the Scientific Committee, IRCCS 'Giannina Gaslini', Genova (2016-present)
- Member of the Scientific-Strategic Committee, Wylab, Chiavari (2016 - present)
- Member of the Advisory Board, 'Sportello Matematico per l'Industria', Consiglio Nazionale delle Ricerche (2012 - present)
- Scientific Director, APRE Liguria (2018 - 2020)
- Member of the Gruppo Nazionale Calcolo Scientifico (GNCS), Istituto Nazionale di Alta Matematica
- Member of the 'Presidio per la Qualità di Ateneo', Università di Genova (2017 - 2018)
- Member of the Committee for the 'Abilitazione Scientifica Nazionale' (2016 - 2018)
- Vice-Rector for Research and Technology Transfer, Università di Genova (2015 - 2018)
- Member of the Osservatorio per la Qualità della Ricerca, Università di Genova (2015 - 2017)
- Member of the Commissione di Ateneo per il Dottorato di Ricerca, Università di Genova (2015 - 2017)
- Coordinator, Commissione Tecnica Spin-off e Brevetti, Università di Genova (2015 - 2017)

- Member of the Working Group of the Conferenza dei Rettori delle Università Italiane (CRUI) for the Industrial PhD Program (2016 - 2018)
- Coordinator of the Italian Innovation Hub (2016 - 2018)
- Vice-President, Polo di Ricerca e Innovazione *Tecnobionet* (2010 - 2016)
- Member of the 'Consiglio di Coordinamento' of the 'Polo di Ricerca e Innovazione' *Tecnobionet* (2011 - 2016)
- Member of the Scientific Committee of the 'Centro Interuniversitario per la Neurofisiologia del Dolore (CIND)' (2011 - 2015)
- Member of the 'Giunta di Dipartimento', Dipartimento di Matematica, Università di Genova (2011 - 2018)
- Member of the 'Commissione Revisione Corso di Studi', Dipartimento di Matematica, Università di Genova (2014 - 2015)
- Rector's representative for International Cooperation to Development, Università di Genova (2016 - 2017)
- Vice-Rector for International Relations, Università di Genova (2014 - 2015)
- Coordinator, Committee for International Relations, Università di Genova (2014 - 2015)
- Director, PhD Program in Mathematics and Applications, Università di Genova (2010 - 2014)
- Director, Centro Interuniversitario per la Neurofisiologia del Dolore (CIND) (2011 - 2014)
- Director, Scuola di Dottorato 'Scienze e Tecnologie per l'Informazione e la Conoscenza (STIC)', Università di Genova (2012 - 2013)
- Member of the panel of the Scuola di Dottorato in Scienze e Tecnologie per l'Informazione e la Conoscenza (STIC), Università di Genova (2004 - 2013)

- Member of the 'Commissione di Programmazione', Dipartimento di Matematica, Università di Genova (2010 - 2011)
- Member of the regional laboratory CNR - INFM LAMIA (2005 - 2009)
- Member of the panel CIVR for the evaluation of research in mathematics and computer science, Università di Verona, Verona, Italy (2006-2009)
- vice-Coordinator of the PhD Program in Mathematics and Applications, Università di Genova (2007-2010)
- Member of the Consiglio Direttivo, Istituto Nazionale di Fisica della Materia (INFM), Unità di Genova (1999-2001)
- Referee for the journals *Inverse Problems*, *Journal of Computational and Applied Mathematics*, *Numerical Functional Analysis and Optimization*, *Measurement Science and Technologies*, *Journal of Computational Acoustics*, *The Astrophysical Journal*, *European Journal of Nuclear Medicine and Molecular Imaging*, *Computer Methods and Programs in Biomedicine*
- Reviewer for the European Research Council

Research projects

- Fondi 5 per mille, Ospedale Policlinico San Martino IRCCS Genova, 'Prognosi del Mieloma Multiplo con imaging quantitativo e intelligenza artificiale (My-Pro)'
- Fondi 5 per mille, Ospedale Policlinico San Martino IRCCS Genova, 'LONG-COVID: approccio multidisciplinare e complicanze neurologiche (NEURO-LONG-COVID)'
- POR - FESR, EPICA (2021)
- Research contract, Roche (2021)
- Research contract, Ospedale Policlinico San Martino IRCCS (2021)

- Principal Investigator, AI-FLARES, Istituto Nazionale di Astrofisica (2019-2021)
- Unit Coordinator, Progetto di Rete MIUR, NeuroartP3 (2019-2022)
- Coordinator, FSE - Regione Liguria, 'Software tool for parametric imaging in nuclear medicine' (2019-2021)
- Coordinator, ASI-INAF, sub-contract in the framework of the "Accordo Attuativo" in the Convenzione Quadro ASI I/013/12/0 - "Solar Orbiter - Supporto scientifico per la realizzazione degli strumenti METIS e SWA/DPU nelle fasi B2-C1" (step 2) (2018-2021)
- Coordinator, ASI-INAF, sub-contract in BRAINRAD, Analysis of neurophysiological data acquired on astronauts at ISS (2019-2020)
- Unit Coordinator, PAR - FAS 2007/13, 'Intelligenza artificiale per estrarre informazione diagnostica nell'imaging complesso (MATRIX)' (2013 - 2016)
- Unit Coordinator and Work Package Leader, H2020-Protec-2014 Research and Innovation Action, *Flare Likelihood and Region Eruption Forecasting* (FLARECAST) (2015-2017)
- Research Coordinator, contract 'ALA Advanced Lidar Applications srl' (2014)
- Coordinator, INdAM GNCS project 2014: *Sparsity in Applied Inverse Problems* (2014)
- Coordinator, sub-contract in the framework of the Accordo Attuativo della Convenzione Quadro ASI I/013/12/0 - "Solar Orbiter - Supporto scientifico per la realizzazione degli strumenti METIS e SWA/DPU nelle fasi B2-C1"
- Coordinator, PO CRO FSE 2007/13 Asse IV: *Optimization of spatial resolution in positron emission tomography for the analysis of physiological parameters in small animal models* (2012-2014)
- Coordinator, FP7-SPACE-2010.2.1 Cooperation Project, *High Energy Solar Physics Data in Europe* (HESPE) (2010-2013)

- Coordinator, INdAM - GNCS, *Computational methods in neuroscience* (2010)
- Research coordinator, contract Paramed s.r.l., *Reduction of distortion effects in MRI* (2009-2010)
- Coordinator, Air Force Office of Scientific Research, *X-ray observations of the Sun: solar flares and their impact on the geophysical space* (2008)
- Coordinator, Fondazione Cassa di Risparmio di Verona, *Bayesian tracking of brain oscillatory activity* (2008-2009)
- Coordinator, INdAM - GNCS, *International Conference on Inverse Scattering Problems* (2008)
- Coordinator, Air Force Office of Scientific Research, *International Conference on Inverse Scattering Problems* (2008)
- Coordinator, Joint Project Carestream Health - Università di Verona, *Image integration in medicine* (2008-2009)
- Coordinator, Joint Project Imavis - Università di Verona, *Organization of video-based biometric data by means of statistical learning techniques* (2008-2009)
- Local Coordinator, MIUR PRIN, *Inverse methods in action: analysis of magnetoencephalography (MEG) time series and imaging-spectroscopy for the Reuven Ramaty High Energy Solar Spectroscopic Imager (RHESSI)* (2006-2008)
- Coordinator, Joint Project, Kodak Health Imaging - Università di Verona, *Integrating information in medical imaging* (2006-2007)
- Coordinator, Indam - GNCS, *Problemi inversi in astronomia: modelli, algoritmi, applicazioni* (2005)
- Coordinator, INFN FRA Project, *Microwaves in medical imaging* (2002)

Lectures at national and international schools

- Web School on *Dynamical Systems and Machine Learning Approaches to Sun-Earth Relations*, International School of Space Science, Consorzio Universitario per la Fisica Spaziale and Università dell'Aquila (2021)
- *Artificial Intelligence Methodology* in 7th Summer School of the European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS 2019)
- INdAM 'Intensive Period', *Computational methods for inverse problems in imaging*, Università dell'Insubria (2018)
- *Scuola Nazionale Dottorandi di Elettrotecnica "F Gasparini"*, Università di Palermo (2016)
- *Bertinoro International Spring School in Computer Science*, Bertinoro, Italy (2007)
- *Minicourse on Inverse Problems*, Trieste, Italy (2001)

Organization of workshops and international conferences

- *NonInvasive Mathematics*, On-line INdAM Workshop, 2021
- Math-tech Workshop *Biomedical imaging: a place where mathematics, clinics, and industry meet*, Istituto Nazionale di Alta Matematica, Roma, 2017
- Conference *Calcolo scientifico e modelli matematici: alla ricerca delle cose nascoste attraverso le cose manifeste*, Dipartimento di Matematica, Università di Genova, 2015
- Conference HESPE - *Un progetto europeo per l'analisi e la gestione di dati in fisica solare*, Festival della Scienza di Genova, 2013
- Conference *La superconduttività al servizio delle neuroscienze*, Festival della Scienza di Genova, 2011
- Conference *Tra Europa e Stati Uniti a caccia di brillamenti solari*, Festival della Scienza di Genova, 2011

- Workshop *Interplay between inversion methods and mathematical models in the applied sciences*, SIMAI 2010, Cagliari, Italy
- Conference *Le equazioni del corpo umano*, Festival della Scienza di Genova, 2010
- *9th RHESSI Workshop*, Genova, Italy, 2009 (member of the organization committee)
- *9th RHESSI Workshop*, Genova, Italy, 2009 (member of the scientific committee)
- *Applied Inverse Problems 2009 (AIP 2009)*, Wien, Austria, 2009 (member of the conference board)
- Workshop *Inverse Problems and Neuroscience, Applied Inverse Problems 2009 (AIP 2009)*, Wien, Austria, 2009
- *International Conference on Inverse Scattering Problems Honoring D. Colton and R. Kress*, Sestri Levante, Italy, 2008 (co-organizer with F. Cakoni and H. Haddar)
- Workshop *The Magnetoencephalography Inverse Problem, Applied Inverse Problems 2007 (AIP 2007)*, Vancouver, Canada, 2007
- Workshop *Imaging, Computation and Inverse Methods in Biomedicine, Applied Computational Electromagnetics 2997 (ACES 2007)*, Verona, Italy, 2007
- Workshop *Non-linear Inverse Problems in Electromagnetic Medical Imaging, Progress in Electromagnetic Research Symposium 2006 (PIERS 2006)*, Cambridge, MA, USA, 2006
- Workshop *An Inverse Problems Perspective on Learning, Applied Inverse Problems 2005 (AIP 2005)*, Cirencester, UK, 2005
- Workshop *Inverse Problems in Astronomy*, SIMAI 2004, Venezia, Italy, 2004

Talks and seminars

2021

- RHESSI Workshop 2021 (invited speaker)
- SIAM GS21 (webinar)
- European Geophysics Union 2021 (webinar)
- AIM: Artificial Intelligence and Mathematics (fundamentals and beyond), CNR - IAC

2020

- Virtual Inverse Days 2020, Helsinki, Finland
- ASI, Tavolo Tematico Analisi Dati e Immagini
- SWICO 2020, Roma, Italy
- SPIE Medical Imaging, Houston, USA

2019

- Congresso UMI 2019, Pavia
- VISUAL 2019, Roma (keynote lecture)
- '18th RHESSI Workshop', Minneapolis
- 'Leukemias 2019', Vienna (invited speaker)
- 'La ricerca clinica: tra network e big data', GOIRC 2019, Firenze (invited speaker)

2018

- Third Meeting of the Italian Solar and Heliosphere Community (SOHE3), Turin
- SIMAI 2018, Roma (plenary lecture)
- SIAM Conference on Imaging Science, Bologna
- RHESSI Meeting 2018, Dublin

- IEEE RTSI 2018, Palermo
- NASA Goddard Space Flight Center, Greenbelt, MD, USA
- DSABNS 2018, Università di Torino
- ASI, Roma
- EGU 2018, Vienna

2017

- NASA Goddard Space Flight Center, Greenbelt, MD, USA

2016

- XXXII Riunione Annuale dei Ricercatori di Elettrotecnica ET2016, Università di Palermo, Palermo, Italy

2015

- Department of Mathematics, University of Sussex
- Convegno Unione Matematica Italiana, Siena, Italy
- CNR - SPIN, Genova, Italy

2014

- Dipartimento di Matematica, Politecnico di Torino, Torino, Italy
- *Fluid Dynamics and Electromagnetism: Theory and Numerical Approximation*, Levico Terme, Trento, Italy
- Italian-French Conference *Ottimizzazione e Processi Dinamici in Apprendimento Statistico e Problemi Inversi*, Sestri Levante, Italy

2013

- International Conference on *Novel Directions in Inverse Scattering* honoring David Colton, University of Delaware, USA

- 2013 Meeting of the Italian Community in Solar and Heliospheric Physics, Catania, Italy
- CNR - IMATI, Pavia, Italy
- Research Center of Applied Mathematics (CIRAM), Università di Bologna, Bologna, Italy
- Department of Computer Science, University College London, UK
- Conference *Inverse Problems: Scattering, Tomography and Parameter Identification*, Bad Herrenalb, Germany
- Workshop on *Theoretical Approaches and Related Mathematical Methods in Biology and Medicine*, Milano, Italy
- Osservatorio Astronomico di Torino, Pino Torinese, Italy

2012

- Oxford Centre for Industrial and Applied Mathematics, Oxford University, UK
- Conference CANUM 2012, Clermont Ferrand, France

2011

- Workshop *MatApp2011*, Università di Trento, Italy
- Dipartimento di Matematica, Università di Trento, Italy
- INRIA - Sophia Antipolis, Athena Group, France
- Corso di Formazione ECM *Sviluppo del trapianto di cellule staminali ematopoietiche. Ricerca e applicazioni, Il traffico cellulare e metodologie di studio*, Azienda Ospedaliera Universitaria San Martino, Genova
- Workshop, *Algebra Lineare Numerica nei Problemi Inversi*, Università dell'Insubria, Como, Italy
- Department of Computer Science, University of Helsinki, Helsinki, Finland

- Workshop, *Shape and Size in Medicine, Biotechnology, Material Sciences and Social Sciences*, Università di Milano, Milano, Italy
- Workshop *Solar Information Processing 2011*, Les Diablerets, Switzerland

2010

- Workshop *Modelisation Mathematique and Simulation Numerique*, Ecole Polytechnique, Paris, France
- Istituto di Cibernetica del CNR 'E. Caianiello', Napoli, Italy

2009

- Mathematical Physics and PDEs, Levico Terme, Trento, Italy
- *Fifth China-Italy Joint Conference on Computational and Applied Mathematics*, Roma, Italy
- Istituto di Tecnologie Avanzate Biomediche, Università di Chieti e Pescara, Chieti, Italy

2008

- *Colloquium Mathematicum*, Dipartimento di Matematica, Università di Genova, Genova, Italy

2007

- *National Congress of Computational Mechanics*, San Francisco, USA
- ACES 2007, Verona, Italy

2006

- *Augsburger Mathematisches Kolloquium*, Institut für Mathematik, Universität Augsburg, Augsburg, Germany
- Dipartimento di Matematica e Applicazioni, Università di Modena, Modena, Italy

- Space Sciences Lab, University of California at Berkeley, USA

2005

- Brain Research Unit, Low Temperature Laboratory, Helsinki University of Technology, Helsinki, Finland

2004

- Dipartimento di Informatica, Università di Ferrara, Ferrara, Italy
- Dipartimento di Matematica, Università di Trento, Trento, Italy
- ECARES, Université Libre de Bruxelles, Brussels, Belgium
- Department of Physics, University of California at Berkeley, USA

2002

- Joint International Meeting AMS-UMI, Pisa, Italy
- *Progress in Electromagnetic Research Symposium 2002 (PIERS 2002)*, Cambridge (MA), USA
- Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany

2000

- *Progress in Electromagnetic Research Symposium 2000 (PIERS 2000)*, Cambridge (MA), USA, 2000

1998

- Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, 1998
- Department of Mathematical Sciences, University of Delaware, 1998
- Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, 1998

- Conference *Advances in Inverse Problems and Applications*, Gargnano, Italy, 1998

1996

- Dipartimento di Matematica, Università di Firenze, 1996

Science dissemination, research policy, innovation and cooperation

2021

- Chair and co-organization (with Luca Sabatini), *Un'ostinata illusione - Quattro incontri sul tempo*, Fondazione Palazzo Ducale, Marzo 2021

2020

- Round table (speaker), *Dialogo sulla Ricerca Europea a Genova e in Liguria*, Centro in Europa, Genova, February 20 2020

2019

- Seminar, *CoffeeTech*, Confindustria Genova
- Round table (chair and speaker), *Resilience and Management of Emergencies in Logistic Networks*, ODS2019, Palazzo San Giorgio, Genova, September 4 2019
- Talk, *Man on the Moon*, Università di Genova, July 18 2019
- Event organization, *APREdays*, Genova, May 21-23 2019
- Round table (speaker), *Unione Europea: partecipazione e comunicazione*, Università di Genova, March 18 2019

2018

- Talk, UNISTEM 2018, Policlinico San Martino IST, 2018 March 16

2017

- Seminar, *CoffeeTech*, Confindustria Genova, 2017 December 15

- Talk, M4I4 - *Mathematics for Industry 4.0*, Vicenza, 2017 November 7
- Talk, *Vivere l'innovazione - Il futuro delle organizzazioni nella digital transformation*, TIM Il Sole 24 Ore, Acquario di Genova, 2017 October 24
- Round Table (speaker), *Università, Città, Sviluppo*, Festa dell'Unità di Genova, 2017 September 3
- Talk, *EUSPACE Summer School, European Union in Space - Law and Technology*, Università di Genova, Campus di Imperia, 2017 July 4
- Talk, *Oltre i confini della ricerca*, Terrazza Colombo - Convegni Cross-mediali, Genova, 2017 May 18
- Talk, *Industria 4.0 in Liguria: un'opportunità di rilancio industriale*, Genova, Hotel Bristol, 2017 March 24

2016

- Round table (speaker), *Migrazioni: nuove proposte di dialogo con i Paesi di origine e di transito*, Genova, Centro in Europa, July 5 2016
- Round table (coordinator), *La crescita del sistema delle imprese in Liguria nel contesto delle sfide dettate dalla trasformazione digitale*, Genova, Palazzo della Borsa, June 29 2016
- Round table (speaker), *Innovazione e sviluppo per una città vivibile e accogliente*, in *Genova Smart Week*, Genova, Palazzo Tursi, May 23 2016
- Round table (speaker), *L'Italia riparte da Genova*, Genova, Palazzo Lercari Parodi, March 31 2016

2015

- Round table (speaker), *La cooperazione italiana in Pakistan*, Genova, Palazzo Ducale, November 10 2015

Teaching activity

- Università di Genova, Corso di Studi in Ingegneria Civile, *Analisi 2*, (2018-present)
- Università di Genova, Corso di Studi in Matematica, *Problemi Inversi e Applicazioni* (2014-present)
- Università di Genova, Corso di Studi in Matematica, *Laboratorio di Matematica* (2014 - 2015)
- Università di Genova, Corso di Studi in Matematica, *Problemi di Scattering* (2011-present)
- Università di Genova, Corso di Studi in Matematica, *Fondamenti di Calcolo Numerico* (2010-2019)
- Università di Genova, Corso di Studi in Matematica, *Teoria dello Scattering* (mini-corso) (2011-present)
- Università di Genova, Corso di Studi in Matematica, *Applicazioni della Matematica alla Medicina* (2006-present)
- Università di Genova, Scuola di Specializzazione in Medicina Nucleare, *Introduzione all'Imaging Medico Nucleare* (2010-present)
- Università di Genova, Corso di Dottorato in *Matematica e Applicazioni, Metodi computazionali per l'Analisi Dati* (2010)
- Università di Genova, Corso di Studi in Matematica, *Fondamenti Matematici dell'Apprendimento Statistico* (2006-2009)
- Università di Verona, Corso di Laurea in Scienze della Comunicazione, *Interazione Uomo Macchina* (2007-2008)
- Università di Genova, Corso di Dottorato in Matematica e Applicazioni, *Applicazioni della Matematica alla Medicina* (2006-2009)
- Università di Verona, Corso di Laurea in Scienze della Comunicazione, *Informatica Documentale* (2005-2008)
- Università di Verona, Corso di Laurea in Scienze della Comunicazione, *Informatica di Base* (2005-2008)

- Università di Genova, Corso di Dottorato in Matematica e Applicazioni, *Problemi Inversi e Applicazioni* (2003-2005)
- Università di Genova, Corso di Laurea in Matematica, *Laboratorio di Elaborazione di Immagini* (2003)
- Università di Genova, Corso di Laurea in Matematica, *Laboratorio di Matematica Computazionale* (2001-2004)
- Università di Genova, Corso di Laurea in Matematica, *Laboratorio di Analisi Numerica* (2001-2003)
- Università di Genova, Corso di Laurea in Informatica, *Laboratorio di Cibernetica* (1998-2001)
- University of Delaware, Business School, *Calculus*, University of Delaware (1997)

Research topics

- Computational data analysis
- Inverse problems
- Machine learning
- Applications to: solar physics, space weather, biomedicine, neuroscience

Publications

Refereed papers

1. Perracchione E, Massa P, Massone A M and Piana M 2021 Visibility Interpolation in Solar Hard X-ray Imaging: Application to RHESSI and STIX *Astrophysical Journal* (in press)
2. Battaglia A F et al 2021 STIX X-ray microflare observations during the Solar Orbiter commissioning phase *Astronomy and Astrophysics* (in press)

3. Georgoulis M K, Bloomfield D S, Piana M et al 2021 The Flare Likelihood and Region Eruption Forecasting (FLARECAST) Project: Flare forecasting in the big data and machine learning era *Journal of Space Weather and Space Climate* (in press)
4. Cicogna D, Berrilli F, Calchetti D, Del Moro D, Giovannelli L, Benvenuto F, Campi C, Guastavino S and Piana M 2021 Flare forecasting algorithms based on high-gradient polarity inversion lines in active regions *Astrophysical Journal* (in press)
5. Dorraji E et al 2021 PET and SPECT imaging of Tertiary Lymphoid Structures (TLS) during the development of Lupus nephritis *International Journal of Immunopathology and Pharmacology* **35**
6. Marini C et al 2021 Myocardial Metabolic Response Predicts Chemotherapy Curative Potential on Hodgkin Lymphoma: A Proof-of-Concept Study *Biomedicines* **9** 971
7. Sommariva S, Caviglia G, Sambuceti G and Piana M 2021 Mathematical Models for FDG Kinetics in Cancer: A Review *Metabolites* **11** 519
8. Sommariva S, Scussolini M, Cossu V, Marini C, Sambuceti G, Caviglia G and Piana M 2021 The role of endoplasmic reticulum in in vivo cancer FDG kinetics *PLOS ONE* **16** e0252422
9. Sommariva S, Caviglia G and Piana M 2021 Gain and Loss of Function mutations in biological chemical reaction networks: a mathematical model with application to colorectal cancer cells *Journal of Mathematical Biology* **82** 1
10. Aramini R, Delbary F, Beltrametti M C, Estatico C, Piana M and Massone A M 2021 On the asymptotic equivalence between the Radon and the Hough Transforms of digital images *SIAM Journal on Imaging Sciences* **14** 506
11. Crisci S, Piana M, Ruggiero V and Scussolini M 2021 A regularized affine-scaling trust-region method for parametric imaging of dynamic PET data *SIAM Journal on Imaging Sciences* **14** 418
12. Vallarino E, Sorrentino A, Piana M and Sommariva S 2021 The role of spectral complexity in connectivity estimation *Axioms* **10** 35

13. Fiz F, Piccardo A, Morbelli S, Bottoni G, Piana M, Cabria M, Bagnasco M and Sambuceti G 2021 Longitudinal analysis of atherosclerotic plaques evolution: an 18 F-NaF PET/CT study *Journal of Nuclear Cardiology* 2021
14. Tagliafico A S, Dominietto A, Belgioia L, Campi C, Schenone D and Piana M 2021 Quantitative imaging and radiomics in multiple myeloma: a potential opportunity? *Medicina* **57** 94
15. Benvenuto F, Campi C, Massone A M and Piana M 2020 Machine learning as a flaring storm warning machine: Was a warning machine for the 2017 September solar flaring storm possible? *Astrophysical Journal Letters* **904** L7
16. Krucker S et al 2020 The Spectrometer/Telescope for Imaging X-rays (STIX) *Astronomy and Astrophysics* **642** A15
17. Massa P, Schwartz R, Tolbert K A, Massone A M, Dennis B R, Piana M and Benvenuto F 2020 MEM_GE: a new maximum entropy method for image reconstruction from solar X-ray visibilities *Astrophysical Journal* **894** 46
18. Tagliafico A S, Belgioia L, Bonsignore A, Signori A, Formica M, Rossi F, Piana M, Schenone D, Dominietto A 2020 Development and definition of a simplified scoring system in patients with multiple myeloma undergoing stem cells transplantation on standard computed tomography: myeloma spine and bone damage score (MSBDS) *Cancer Imaging* **20** 31
19. Bauckneht M, Lai R, Miceli A, Schenone D, Cossu V, Donegani M I, Raffa S, Borra A, Marra S, Campi C, Orengo A, Massone A M, Tagliafico A, Caponnetto C, Cabona C, Cistaro A, Chió A, Morbelli S, Nobili F, Sambuceti G, Piana M, Marini C 2020 Spinal cord hypermetabolism extends to skeletal muscle in amyotrophic lateral sclerosis: a computational approach to [18F]-fluorodeoxyglucose PET/CT images *European Journal of Nuclear Medicine and Molecular Imaging Research* **10** 23
20. Cellerino M, Ivaldi F, Pardini M, Rotta G, Vila G, Baecker-Koduah P, Berge T, Laroni A, Lapucci C, Novi G, Boffa G, Sbragia E, Palmeri S, Asseyer S, Hogestol E, Campi C, Piana M, Inglese M, Paul F, Harbo

- H F, Villoslada P, Kerlero de Rosbo N, Uccelli A 2020 *Neurology Neuroimmunology Neuroinflammation* **7** 3
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Supervision of PhD Thesis

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Supervision of BSc Thesis

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