Curriculum Vitae
Antonio Vitolo

Education

- Master Degree in Physics (110/110 cum laude), Univ. Salerno
- Master Degree in Engineering (110/110 cum laude), Univ. Salerno

Academic position

- Full Professor of Mathematical Analysis, Univ. Salerno (2011-)
- Associate Professor (1992-2011)
- Assistant Professor (1986-92)

Honours and titles

- President of the Degree and Master Degree Program in Mathematics (2013-16)
- Eligible for Committees of National Scientific Qualification (ASN) in Math (2016-18)
- Coordinator of Research Section of Istituto Nazionale di Alta Matematica at Engineering in Salerno (2017-)
- Eligible for Committees of National Scientific Qualification (ASN) in Math (2018-)

Membership

- Unione Matematica Italiana;
- Società Italiana per la Matematica Applicata e Industriale;
- European Mathematical Society
- Gruppo Nazionale per l'Analisi Matematica, la Probabilità e le Applicazioni

Scientific research fields, results and production

- Fully nonlinear elliptic and parabolic PDE: max principles, ABP and Harnack estimates, gradient bounds and Glaeser estimates, viscosity methods, existence and uniqueness, Liouville and Phragmén-Lindelöf principles, entire and blow-up solutions
- Functional analysis: functional spaces, linear and nonlinear operators, removable singularities and capacity, eigenvalues and domains
- Elasticity: inverse problems for oscillating rods
- Homogenization in Calculus of Variations: representation of (Γ-)limit functionals and convergence of minima
- Analytic number theory: asymptotic estimates for almost-primes via sieve methods
- 65 publications, 429 citations by 185 authors on MathSciNet

Editorial Boards

- Collana Scientifica di Ateneo, Univ. Salerno (2001-16)
- “Percorsi incrociati”, in memory of V. Cafagna. Collana Scientifica di Ateneo 2011
- “Proc. of the 9th AIMS Int. Conf. (Orlando, USA)”. Discrete Contin. Dyn. Syst. Suppl. 2013
- "Annals of University of Craiova" (Mathematics and Computer Science Series), dal 20-11-2018

Reviewer

- Mathematical Reviews (AMS).

- Abstr. Appl. Anal; Advances in Calculus of Variations; Adv. Differential Equations; Adv. Nonlinear Anal.; Commun. Pure Appl. Anal.; Complex Variables and Elliptic Equations; Differential Integral Equations; DCDS; Dyn.Partial Differ. Equ. ; Electron. J. Differential Equations; Int. Math. Res. Not.; J. Differential Equations; J. Math. Anal. Appl.; Journal Math. Pures Appl.; Mediterranean Journal of Mathematics; Nonlinear Anal.; Nonlinear Differential Equations Appl.; Nonlinearity; Rendiconti del Seminario Matematico della Università di Padova; Rendiconti di Matematica e delle sue Applicazioni; The Journal of Geometric Analysis

Invited speaker

- Symposium on Analytic Number Theory. Amalfi, 25-29 sep 1989
- Elliptic and Parabolic P.D.E.'s and Applications. Capri, 19-23 sep 1994
- Conference on Differential & Difference Equations and Applications. Florida Institute of Technology, Melbourne, FL, USA, 1-5 aug 2005
- Second International Conference of Applied Mathematics. Technical University, Plovdiv, 12-18 aug 2005
- Invited speaker: 14th European Conference on Mathematics for IndustryUniver. sity Carlos III, Madrid, 10-14 jul 2016
- New trends in viscosity solutions and nonlinear PDE. Instituto Superior Técnico, Lisbona, 24-28 jul 2006
- Special Session 'Analysis and Computation for Nonlinear Differential Equations'. 5th International Conference on Differential Equations and Dynamical Systems. University of Texas - Panamerican, Edinburg, Texas, USA, 16-18 dec 2006
- Special Session 'Harmonic Analysis and Operator Theory'. Fall Western AMS Sectional Meeting. University of New Mexico, Albuquerque, New Mexico, USA, 13-14 oct 2007
- XVI International Symposium on Mathematical Methods Applied to the Sciences. Universidad de Costa Rica, San José, Costa Rica, 19-22 feb 2008
- Special Session 'Differential Equations of Mixed Type Arising in Engineering, Biology and Ecology'. 7th AIMS Conference on Dynamical Systems and Differential Equations. University of Texas at Arlington, Texas, USA, 18-21 may 2008
- Viscosity, metric and control theoretic methods in nonlinear PDEs: analysis, approximations, applications. Sapienza Università di Roma, 3-5 sep 2008
- Eighth Mississippi State - UAB Conference on Differential Equations & Computational Simulations. Department of Mathematics and Statistics, Mississippi State University, Mississippi State, MS, USA, 7-9 may 2009
- 6th European Conference on Elliptic and Parabolic Problems. Hotel Serapo, Gaeta, 25-29 may 2009
- The 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications. Special Session 'Analysis and Simulations of Nonlinear Systems'. Orlando, Florida, USA, 1-5 jul 2012
- Mostly Maximum Principle. Sapienza Università di Roma, 12-14 sep 2012
- A meeting with Louis Nirenberg. Riemann International School of Mathematics. Università dell'Insubria, Villa Toepliz, Varese, 10-13 jun 2014
- The 10th AIMS Conference on Dynamical Systems and Differential Equations. Special Session 'Viscosity, nonlinearity and maximum principle'. Universidad Autonoma Madrid, Instituto de Ciencias Matematicas, 7-11 jul 2014
- The Seventh International Conference on Differential and Functional Differential Equations (DFDE). People's Friendship University of Russia, Moscow, Russia, 22-29 aug 2014

- Fall Southeastern AMS Sectional Meeting. Special Session 'Evolution Equations and Partial Differential Equations'. University of Memphis, 17-18 oct 2015
- 3 Days on Evolution PDEs. Università di Salerno, 27-29 apr 2016
- Convegno GNAMPA 2016. Montecatini, 20-23 jun 2016
- First Joint Meeting Brazil-Italy in Mathematics. Special Session 'Elliptic Partial Differential Equations'. Instituto de Matematica Pura e Aplicada (IMPA). Rio de Janeiro, 29 aug – 2 sep 2016
- 5-days workshop: Mostly Maximum Principle, BIRS, Banff, Canada, April 2 - 7, 2017
- III Workshop on Trends in Nonlinear Analysis. Università di Cagliari, 7-10 sep 2017
- Workshop "Le arti e la matematica", Dipartimento di Ingegneria, Università di Salerno, 12 apr 2018
- 3 Days on Evolution PDEs. Agropoli, 19-21 jun 2019
- Seminario B. Pini. Bologna, 21 mar 2019
- Analysis and PDE. Institut fur Angewandte Mathematik, Leibniz Universitat Hannover, 7-9 oct 2019

Visiting Professor

- Courant Intitute, New York, by prof. Louis Nirenberg (Feb 2002).
- Saitama University, Japan. Invited by Prof. Shigeaki Koike: Feb 2009.
- Saitama University, Japan. Invited by Prof. Shigeaki Koike: Feb 2011.
- Paris, by prof. Louis Nirenberg (Giu 2012).
- Université de Rouen, France, by proff. Donato, Jouan e Pergamenchtchikov (Set 2012).

Organization of workshops

- “Sistemi Informativi Geografici – Le metodologie scientifiche e tecnologiche per il monitoraggio e la gestione del territorio nei Paesi del Mediterraneo”, 2002
- “Giornata scientifica per ricordare Vittorio Cafagna”. Univ. Salerno, 2008
- “Giornata scientifica per ricordare di Riccardo De Arcangelis”. Univ. Salerno, 2010
- “Positivity: a key to fully-nonlinear equations”. Lloyd's Baia Hotel, Vietri (SA), 2010
- “Mostly Maximum Principle”. Sapienza Univ. Roma, 2012
- “Viscosity, nonlinearity and maximum principle”. Special Session at The 10th AIMS Conference. Univ. Autonoma de Madrid, Jul 7-11, 2014
- “Mostly Maximum Principle”. Castello Aragonese di Agropoli (SA), 2015
- “Elliptic Partial Differential Equations”. Special Session at The First Joint Meeting Brazil - Italy in Mathematics. Instituto de Matematica Pura e Aplicada (IMPA). Rio de Janeiro, 2016
- “Mostly Maximum Principle”. Banff International Research Station, 2017
- "Fully nonlinear elliptic equations and viscosity solutions". Minisymposium at International Conference on Elliptic and Parabolic Problems. Gaeta, 2017
- Le arti e la matematica, Università di Salerno, April 12, 2018
- From Optimal Control to Maximum Principle, September 12 - 14, 2018
- Classical and new methods in Calculus of Variations and PDEs, Università di Salerno, January 9-10, 2019

National Research Projects

- Quota ex 40% MURST 1993 (local PI): “Teoria dei Numeri”, coord. prof. Viola.
- Quota ex 40% MURST 1997: “Rappresentazione di Funzionali Variazionali ed applicazioni a problemi di rilassamento e di omogeneizzazione. Equazioni Differenziali in domini non limitati e spazi funzionali associati”

- P.O.P. Reg. Campania 1994-99 mis. 5.4.2 (coordinator): “CArtografia SPaziale mediante Interferometria SAR”.
- PRIN 2005: “Metodi di viscosità, metrici e di teoria del controllo in equazioni alle derivate parziali non lineari”
- PRIN 2007: “Metodi metrici e del principio di massimo per equazioni di Hamilton-Jacobi ed ellittiche non lineari”
- PRIN 2009: “Metodi di viscosità e di controllo nello studio di modelli diffusivi nonlineari con degenerazioni”
- Program 'Knowledge Messengers'. Piano di Azione e Coesione MIUR 2012 (Responsible for the Dept. of Mathematics): “Problemi variazionali di tipo ellittico e introduzione agli elementi finiti” (ID 200, prof. Donato, Univ. Rouen); “Data mining di dati satellitari per lo studio di calamità naturali” (ID 474, prof. Cervone, Penn State University)
- GNAMPA 2013 (PI): “Equazioni ellittiche fully nonlinear: proprietà qualitative e applicazioni”
- GNAMPA 2015 (PI): “Viscosity solutions of degenerate elliptic equations arising in geometric problems”.
- GNAMPA 2016: “Analysis and developments for fully nonlinear equations via the Maximum Principle”.
- GNAMPA 2017: “Viscosity solution methods for fully nonlinear degenerate elliptic equations”.
- GNAMPA 2018: "Costanti critiche e problemi asintotici per equazioni completamente non lineari"
- GNAMPA 2019: "Problemi differenziali per operatori fully nonlinear fortemente degeneri"
- GNAMPA 2020 (PI): “Metodi di viscosità e applicazioni a problemi non lineari con debole ellitticità”

Local research projects

- Quota ex 60% MURST 1998-2001 (PI): “Analisi Funzionale ed Equazioni Differenziali”
- Quota ex 60% MURST 2003-07 (PI): “Equazioni Differenziali e Matematica Applicata”
- FARB 2008-10 (PI): “Equazioni Differenziali e Modelli Matematici”
- FARB 2011: “Equazioni ellittiche e applicazioni”
- FARB 2012 (PI): “Metodi di test per EDP con applicazioni”
- FARB 2013 (PI): “Equazioni ellittiche non lineari con eventuali degenerazioni”
- FARB 2014 (PI): “Equazioni ellittiche non lineari con eventuali degenerazioni”
- FARB 2015 (PI): “Equazioni ellittiche non lineari: metodi e applicazioni”
- FARB 2016: “Operatori di Kolmogorov con potenziali singolari sul gruppo di Heisenberg”
- FARB 2017 & 18- & 2019 (PI): “PDE and Applications”
- FARB 2020: “Pdes, probabilistic methods and applications”

Director of post-doc research projects

- Nonlinear elliptic PDE. Department of Mathematics and Computer science (2004-07)

PhD students and Post-doc

- Maria E. Amendola. PhD in Mathematics (2004-07)
- Giulio Galise. PhD in Mathematics, Physics and Computer Sciences (2010-12)

Teaching activities

- Current courses (2019-20)

- Mathematics I for the Degree in Civil Engineering
- Mathematical Analysis I and II for the Master Degree Program in Building Engineering–Architecture

- Mathematical and Mechanical Models for Structural Engineering and Architecture: Probabilistic methods for structural safety, for the Doctoral Course in Risk and sustainability in civil, architectural and environmental engineering systems

- Past courses (1985-2019)
  - Mathematical Analysis for Master Degree Programs in Mathematics, Physics, Computer Science
  - Geometry for the Master Degree Program in Engineering
  - Principles of Advanced Mathematical Analysis for Master Degree Programs in Mathematics
  - Mathematical Methods of Engineering for Master Degree Programs in Engineering
- Doctoral courses
  - Elliptic Equations, Univ. Salerno (2010)
  - Viscosity solutions of fully nonlinear elliptic equations, Univ. Rouen (2015)
  - Mathematical and Mechanical Models for Structural Engineering and Architecture: Probabilistic methods for structural safety, for the Doctoral Course in Risk and sustainability in civil, architectural and environmental engineering systems (2020)
- Training courses for teachers
  - Metodo di Newton e applicazioni alla geometria delle masse (Mathesis, Avellino 1997-98)
  - Didattica integrata della Matematica e della Fisica (TFA 2011-12, PAS 2013-14, TFA 2014-15, classe A049, Univ. Salerno)
  - Modelli Matematici ed Equazioni Differenziali (PLS, Univ. Salerno, 2015)
  - Modelli Matematici ed Applicazioni in Fisica, Scienze, Economia (PFD, Liceo Scientifico "Da Procida", Salerno, 2015)
  - Modelli Matematici e Problemi di Ottimizzazione (PLS, Univ. Salerno, 2016)

Organizing activity

- Responsible of Erasmus Agreement with Univ. Marseille (2018-)
- Responsible of Erasmus Agreement with Univ. Rouen (2013-)
- Department Delegate for PCTO (2020-)
- PhD Board of the Doctoral Program in Risk and sustainability in civil, architectural and environmental engineering systems (2020-21)
- Logistics Commission, Dept. of Civil Engineering (2016-19)
- Education Commission, Dept. of Civil Engineering (2016-19)
- President of the Degree and Master Degree Program in Mathematics (2013-16)
- PhD Board of the Doctoral Program in Mathematics (2001-16)
- Scientific Commission of Area Matematica e Informatica, Univ. Salerno (2002-12)
- Scientific Committee of PhD Program in Math., Phys., Computer and Biological Sciences (2011)
- Scientific Committee of Library of Science Faculty (1993-98; 2010)
- Resources Commission of Science Faculty (2001-08)
- Founding Committee of Master Degree in “Scienze Biologiche” (2006-07)
- Self-Evaluation Group of the Master Degree Program in Mathematics (2002-05)
- President of the Scientific Committee of Project I.F.T.S. “Tecnico Superiore per il monitoraggio e la gestione del Territorio e dell'Ambiente” (Piano Regionale Campania 2002-03)
- Founding Committee of University Diplome in “Valutazione e Controllo Ambientale” (1998-99)
- Board of Science Faculty President, Univ. Salerno (1993-96)