

CURRICULUM VITAE ET STUDIORUM

Last name: Manganaro

First name: Natale

Born: July 21st 1962, Messina, Italy

Nationality: Italian

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Position: full professor in applied mathematics, Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences (MIFT), University of Messina, Italy

Education:

- 1985, Master of Science in Mathematics, University of Messina (diploma with "honour")
- 1986, Scholarship of INdAM (Italian National Institute for Advanced Mathematics)
- 1990, PhD in Mathematics, Universities of Catania, Messina and Palermo

Career:

- 1990 - 1999, Tenured researcher in Applied Mathematics, University of Messina
- 1992 (April - September), Research Fellow of C.N.R. (Italian National Research Council) at the Department of Mathematics and Statistics of University of Edinburgh
- 1999-2001, Associate Professor in Applied Mathematics, University of Trento
- 2001 - present, Full Professor in applied Mathematics, University of Messina

Responsibilities:

- Member of the Committee for the didactic evaluation, Bachelor in Mathematics, 2017 - present.

- Head of Department of Mathematics, University of Messina, (2004-2007), (2007-2012).
- Member of research committee of Academic Senate, University of Messina (2015 - 2018)
- Member of committee for financial supports of Academic Senate, University of Messina (2015 - 2018).
- Member of Academic Senate, University of Messina (2015 - 2021).
- Head of INdAM's Research Unit of Messina (2017 - 2020).

Teaching activities:

- Continuum Mechanics (University of Messina, 2016 - present)
- Wave Propagation in Continuum Media (University of Messina, 2018 - present)
- Rational Mechanics (University of Messina, 1990 - 1999)
- Rational Mechanics (University of Trento, 1999-2001)
- Advanced Mechanics (University of Messina, 2008 - 2012)
- Calculus I (University of Messina, 2001- present)
- Calculus II (University of Messina, 2001 - 2017)

Research projects:

- MURST COFIN 2000 titled "Problemi Matematici Non Lineari di Propagazione e Stabilità nei Modelli del Continuo" ;
- PRA 2001 (University of Messina) titled "Metodologie di Riduzione per Modelli Evolutivi di Interesse Fisico Matematico" ;
- GNFM-INDAM 2001 titled "Propagazione Ondosa Non Lineare ed Analisi Gruppale con Applicazioni alla Termodinamica Estesa";
- PRA 2002 (University of Messina) titled "Metodologie di Riduzione per Modelli Non Lineari di Evoluzione
- GNFM-INDAM 2002 titled "Modelli e Metodi Matematici per lo Studio del Traffico Stradale";
- INDAM 2003 titled "Modellistica Numerica per il Calcolo Scientifico e Applicazioni Avanzate";
- PRA 2003 (University of Messina) titled "Metodologie di Riduzione e Risoluzione di Problemi Iniziali e/o al Contorno per Equazioni di Evoluzione"
- MURST COFIN 2003 titled "Problemi Matematici Non Lineari di Propagazione e Stabilità nei Modelli del Continuo";
- GNFM-INDAM 2004 titled "Simmetrie e Tecniche di Riduzione per Equazioni Differenziali di Interesse Fisico-Matematico" ;
- MIUR COFIN 2005 titled "Nonlinear Propagation and Stability in Thermodynamical Processes of Continuous Media".

- FFABR 2019 (University of Messina)
- MIUR PRIN 2017

Organizing activities

- Co-organizer EUROMECH COLLOQUIUM N.270 on *Nonlinear Waves Governed by Hyperbolic Dissipative Models*, (Reggio Calabria, September 25-28, 1990);
- Co-organizer *IV^o International Conference on Hyperbolic Problems* (Taormina, April 3-8, 1992);.
- Chairman Workshop on Recent Advances in Riemann Problems (Messina, June 15-20, 2005)
- Chairman XIV International Conference on Waves and Stability in Continuous Media (Baia Samuele, Ragusa, June 30 - July 7, 2007).
- Chairman Giornate di Studio sui Modelli della Meccanica dei Continui dedicated to Professor Giuseppe Grioli in occasion of his 100^o birthday (Messina, April 13-15, 2012)
- Chairman of INdAM's DAY 2017 (Messina, June 7, 2017).

Research Interest

- Modelling of Evolution Phenomena within the framework of Continuum Mechanics.
- Group analysis and reduction methods for PDEs
- Nonlinear waves propagation

Main Contributions

- Reduction procedures for solving in a closed form classes of initial and/or boundary value problems associated with modelling waves propagation phenomena
- Differential Constraints Method for solving Riemann Problems and Generalized Riemann Problems for balance laws.
- Soliton-like nonlinear wave interactions.