



BIOGRAPHY

Personal Details

Date of Birth: December 13th, 1964

Status: Married, two children

Professional experience

2002-present: Professor, University of Palermo

1999-2002: Associate Professor, University of Palermo

1993-1999: Ricercatore, University of Palermo

1992-1993: Visiting Assisting Researcher, Department of Mathematics, UCLA

1991-1992: Visiting Researcher, Mechanical Aerospace Nuclear Engineering Dept, UCLA

Education

1991: PhD in Mathematics, University of Catania, Advisor A.M. Anile

1986: Laurea in Mathematica, University of Catania, Supervised by A.M. Anile

Visiting Positions

2020, February: Professeur invité, Université Paris-Est Marne-la-Vallée, Paris

2016, August-December: Visiting Scholar, Institute Pure Appl Math, Los Angeles

2015, September-November: Visiting Scholar, Institute Pure Appl Math, Los Angeles

2015, January: Visiting Scholar, Institute Pure Appl Math, Los Angeles

2014, August-December: Visiting Professor, Math Dept Univ. Southern California, Los Angeles,

2013, August-October: Visiting Scholar, Institute Pure Appl Math, Los Angeles

2003, September-November: Visiting Professor, Math Dept UCLA, Los Angeles

2002, January-February: Professeur invité, Université de Marne-la-Vallée, Paris

2000, May-June: Professeur invité, Université de Paris VII, Paris

1999, February: Visiting Professor, Math Dept Univ. of Arizona, Tucson

1997, July-September: Visiting Faculty, Math Dept UCLA, Los Angeles

1996, July-September: Visiting Faculty, Math Dept UCLA, Los Angeles

1995, July-September: Visiting Faculty, Math Dept UCLA, Los Angeles

1994, July-September: Visiting Faculty, Math Dept UCLA, Los Angeles

1993, July-October Visiting Faculty, Math Dept UCLA, Los Angeles

Awards and Honors

2000, quoted in the book: Development of Mathematics 1950-2000, Birkhauser 2000

2010, quoted in the book: La Matematica IV, Pensare il mondo, C.Bartocci and P.Odifreddi (eds), Einaudi 2010

2013, the paper: M Cannone, MC Lombardo, M Sammartino; Well-posedness of Prandtl equations with non-compatible data, Nonlinearity, 26(12), (2013), pp. 3077-3100, included in the exclusive **2013 Nonlinearity Highlights Collection**

2015, Cataldo Agostinelli e Angiola Gili Agostinelli Prize for Pure and Applied Mechanics and Mathematical Physics, Accademia Nazionale dei Lincei

2019, the paper F. Gargano, G. Ponetti, M. Sammartino, V. Sciacca, Route to chaos in the weakly stratified Kolmogorov flow, *Physics of Fluids*, 31 (2), art. no. 024106 (2019), included in the **Featured Physics of Fluids Collection**

20 SELECTED PUBLICATIONS

For a more extensive list of selected publication, please visit
<http://math.unipa.it/~marco/publication.html>

- R.E. Caflisch, M.C. Lombardo, M. Sammartino, *Vortex layers of small thickness*, **Communications on Pure and Applied Mathematics**, accepted.
- F. Gargano, G. Ponetti, M. Sammartino, V. Sciacca, *Route to chaos in the weakly stratified Kolmogorov flow*, **Physics of Fluids**, 31 (2), art. no. 024106 (2019).
- G. Gambino, M.C. Lombardo, M. Sammartino, *Cross-diffusion-induced subharmonic spatial resonances in a predator-prey system*, **Physical Review E**, 97 (1), art. no. 012220, (2018).
- M.C. Lombardo, R. Barresi, E. Bilotta, F. Gargano, P. Pantano, M. Sammartino, *Demyelination patterns in a mathematical model of multiple sclerosis*, **Journal of Mathematical Biology**, 75 (2), pp. 373-417 (2017).
- V. Sciacca, M. Schonbek, M. Sammartino, *Long time behavior for a dissipative shallow water model*, **Annales de l'Institut Henri Poincaré (C) Analyse Non Lineaire**, 34(3), pp. 731-757 (2017).
- I. Kukavica, M.C. Lombardo, M. Sammartino, *Zero viscosity limit for analytic solutions of the Primitive Equations*, **Archive for Rational Mechanics and Analysis**, vol.222, (1), pp.15-45 (2016).
- F. Gargano, M. Sammartino, V. Sciacca, K.W. Cassel, *Analysis of complex singularities in high-Reynolds-number Navier-Stokes solutions*, **Journal of Fluid Mechanics**, 747, pp. 381-421 (2014).
- G. Gambino, M.C. Lombardo, M. Sammartino, V. Sciacca, *Turing pattern formation in the Brusselator system with nonlinear diffusion*, **Physical Review E**, vol.88(4), 042925 (2013).
- M. Cannone, M.C. Lombardo, M. Sammartino, *Well-posedness of Prandtl equations with non-compatible data*, **Nonlinearity**, vol.26(12), 3077–3100 (2013).
- F. Gargano, M. Sammartino, V. Sciacca, *High Reynolds number Navier-Stokes solutions and boundary layer separation induced by a rectilinear vortex*, **Computers and Fluids**, vol.52, 73–92 (2011).
- R.E. Caflisch, M.C. Lombardo, M. Sammartino, *Asymptotic Analysis of a Slightly Rarefied Gas with Nonlocal Boundary Conditions*, **Journal of Statistical Physics**, vol.143(4), 725–739 (2011).

- F. Gargano, M. Sammartino, V. Sciacca, *Singularity formation for Prandtl's equations*, **Physica D-Nonlinear Phenomena**, vol.238, 1975–1991 (2009).
- M.C. Lombardo, R.E. Caflisch, M. Sammartino, *Non-Local Scattering Kernel and the Hydrodynamic Limit*, **Journal of Statistical Physics**, vol.130, 69–82 (2008).
- M. Cannone, M.C. Lombardo, M. Sammartino, *Well-posedness of the boundary layer equations with a non-analyticity hypothesis*, **SIAM Journal on Mathematical Analysis**, vol.35; 987-1004 (2003).
- C.D. Levermore, M. Sammartino, *A shallow water model in a basin with varying bottom topography and eddy viscosity*, **Nonlinearity**, Vol.14, n.6, 1493-1515 (2001)
- M.C. Lombardo, M. Sammartino, *Zero viscosity limit of the Oseen equations in a channel*, **SIAM Journal on Mathematical Analysis**, Vol.33(2), 390-410 (2001).
- M. Sammartino, R.E. Caflisch, *Zero viscosity limit for analytic solutions of the Navier-Stokes equations on a half space II: Construction of the Navier-Stokes solution*, **Communications in Mathematical Physics**, vol.192, 463-491 (1998).
- M. Sammartino, R.E. Caflisch, *Zero viscosity limit for analytic solutions of the Navier-Stokes equations on a half space I: Existence for Euler and Prandtl equations*, **Communications in Mathematical Physics**, vol.192, 433-461 (1998).
- M. Sammartino, F. Malvagi, G.C. Pomraning, *Diffusive Limits for Particle transport in Stochastic Mixtures*, **Journal of Mathematical Physics**, vol.33, (4), 1480-501 (1992).
- A.M. Anile, S. Pennisi, M. Sammartino, *Covariant Radiation Hydrodynamics*, **Annales de l'Inst. H.Poincaré**, vol.56, (1):48-74 (1992).
- A.M. Anile, S. Pennisi, M. Sammartino, *A Thermodynamical Approach to Eddington Factors*, **Journal of Mathematical Physics**, vol.32, 544 (1991).

INVITED TALKS AND LECTURES

1. plenary talk at the XX International conference on Waves and Stability in Continuous Media, Maiori (SA), June 10-14, 2019.
2. invited at the First CISAS Biomathematics Workshop, IASI-CNR e IBIM-CNR, Palermo October 12, 2018.
3. plenary talk at the international conference CICAM9, Ninth China-Italy Colloquium on Applied Mathematics, Assisi, June 12-15, 2018.
4. invited talk at the *Workshop on Mathematical fine structures in fluid dynamics*, Intensive Program on Fluid and waves, GSSI, L'Aquila, June 11-15, 2018.
5. invited talk at the conference *Equazioni alle Derivate Parziali nella Dinamica dei Fluidi*, Pisa, February 5-7, 2018.
6. invited talk at the conference *New Trends in Fluid and Solids Models*, Salerno, January 30-February, 2018.
7. invited talk at the Wolfgang Pauli Institute (Wien), Workshop on *Mathematical Amelioration in Fluid Dynamics*, Wien, December 14-17, 2018.

8. plenary talk at the XIX International conference on Waves and Stability in Continuous Media, Bologna, June 12-16, 2017.
9. talk at the First joint Brazil-Italy meeting, workshop on *Recent Progress in Fluid Dynamics*, Rio de Janeiro, August 29, 2016.
10. invited talk at the conference *Nuove Frontiere in Meccanica dei Continui* in onore di Giuseppe Grioli, Accademia dei Lincei, Rome, June 21-22, 2016.
11. invited at the BIRS Workshop *Recent Advances in Hydrodynamics*, Banff, Canada, June 5-10, 2016.
12. invited at the Workshop on *Complex systems of reaction-diffusion*, Paris, March 11-14, 2016.
13. invited talk at the conference *Couches limites et Interactions Fluide/Structure*, Bordeaux, January 11-14, 2016.
14. plenary lecture at the XX Congress of Italian Mathematical Association, Siena, September 7-12, 2015.
15. plenary talk at the XVIII International conference on Waves and Stability in Continuous Media, Cetraro (CZ), June 1-5, 2015.
16. invited talk at the Seventh China-Italy Colloquium on Applied Mathematics, Cinisi (PA), September 8-11, 2014.
17. invited talk at the International Conference *Advances in Mathematical Fluid Mechanics, Stochastic & Deterministic Methods*, Lisbon, June 30-July 5, 2014.
18. invited talk at the *Fourth Workshop on Fluids and PDE*, Rio de Janeiro, IMPA, May 26-30, 2014.
19. plenary talk at the XVII International conference on Waves and Stability in Continuous Media, Levico Terme (TN), June 17-21, 2013.
20. plenary talk at the *Sixth China-Italy Colloquium on Applied Mathematics*, Shanghai, October 22-27, 2012.
21. invited talk at the Minisymposium on *Infinite Dimensional Dynamics and Applications*, 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, Florida, July 1-5, 2012.
22. invited talk at the Minisymposium on *Singular Perturbations and Boundary Layer Theory*, 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, Florida, July 1-5, 2012.
23. invited talk at the Minisymposium on *The many aspects of Fluids and Harmonic Analysis*, SIAM Conference on Analysis of PDE, San Diego, November 14-17, 2011.
24. invited talk at the workshop *Stability and Qualitative Analysis of Dynamical Systems*, Levico Terme (TN), October 4-5, 2011.
25. invited talk at the INDAM workshop *Nonlinear Hyperbolic Systems of Balance Laws in Extended Thermodynamics and Kinetic Theory*, Cortona (Italy), September 4-10, 2011.
26. plenary talk at XVI International conference on Waves and Stability in Continuous Media, Brindisi, June 12-18 2011.
27. plenary talk at *Fifth China-Italy Colloquium on Applied Mathematics*, Acireale, September 27-30, 2010.

28. invited talk at the Minisymposium on *Fluids and Harmonic Analysis*, SIAM Conference on Dynamical systems and PDE, Barcelona, May 31-July 4, 2010.
29. plenary talk at IPERBA, *13th Meeting on Hyperbolic Equations*, Bari, February 11-13, 2009.
30. invited talk at *New Trends in Industrial and Applied Mathematics*, Catania, November 10-13, 2008.
31. plenary talk at the International conference on *New Trends in Fluid and Solid Models*, Vietri (SA), February 28- March 1 2008.
32. plenary talk at XIV International conference on Waves and Stability in Continuous Media, Scicli (RG), June 19-July 6, 2007.
33. plenary talk at the Workshop on *PDE and Fluid Mechanics*, Warwick, May 21-23, 2007.
34. plenary talk at XIII International conference on Waves and Stability in Continuous Media, Catania, June 19-25, 2005.
35. plenary talk at the second *China-Italy Joint Symposium on Applied Mathematics*, Grado, September 2005.
36. plenary talk at IPERPI, *11th Meeting on Hyperbolic Equations*, Pisa, October 20-22 2004.
37. plenary talk at the Assemblée Scientifica GNFM-INdAM, Montecatini Terme, October 28-30, 2004.
38. Five lectures at the *XXIX School of Mathematical Physics*, Ravello, September 8-18, 2004.
39. plenary talk at XII International conference on Waves and Stability in Continuous Media, Cagliari, June 1-7, 2003.
40. plenary talk at IPERBS, *8th Meeting on Hyperbolic Equations*, Brescia, November 30-2 December 2000.
41. Five lectures at the Summer School on *Non Linear Partial Differential Equations*, Lisbon, July 16-20, 2001.
42. plenary talk at IPERRoma99, *7th Meeting on Hyperbolic Equations*, Rome, October 25-27, 1999.
43. plenary talk at *Equations de Navier-Stokes et analyse microlocale*, Marseille Luminy, 9-13 November, 1998.
44. plenary talk at *Models of Continuous Mechanics and Thermodynamics*, Darmstadt, September 30-Oct.2, 1998.
45. invited talk at *Systems with multiple scales*, Oberwolfach, May 25-29, 1998.

PROJECTS

Principal Investigator: PRIN 2017 “Multiscale phenomena in Continuum Mechanics: singular limits, off-equilibrium and transitions” (project number: 2017YBKNCE).

Marco Sammartino: curriculum vitae

Department of Engineering, University of Palermo, ITALY

E-mail: marcomarialuigi.sammartino@unipa.it

Progetto di Grid Computing Cometa (COnsorzio Multi Ente per la promozione e l'adozione di Tecnologie di calcolo Avanzato) Pi2S2 per l'Implementazione e lo Sviluppo di una e-Infrastruttura basata sul paradigma della grid;

Principal Investigator: INDAM-Progetto GNFM 2004: Problemi di Diffusione e Controllo di Inquinanti nei Fluidi e nei Porosi;

Principal Investigator: INDAM-Progetto GNFM 2003: Analisi qualitativa non lineare per continui dissipativi;

Principal investigator of the italian unit: CRUI: Programma di cooperazione Italo-Francese Galileo 2001-2002 *"Etude mathématique des modèles de pollution des sols: influence sur le nettoyage des sols de la concentration de produits modifiant la mouillabilité et la viscosité de différentes phases"*.

Principal Investigator: INDAM- Progetto GNFM 2002: Insiemi assorbenti, attrattori e varietà inerziali nella fluidodinamica esterna ed applicazioni alla geofisica.

ADMINISTRATION AND OTHER SERVICES

Administration services at the University of Palermo

2010-2011 Chair of the Undergraduate Program in Mathematics.

2003-2007 Chair of the Undergraduate Program in Applied Mathematics.

Other services

2013-present Member of the Consiglio Scientifico del G.N.F.M.- Gruppo Nazionale di Fisica Matematica dell'INDAM

Service as Referee for many journals among which: *Inventiones Mathematicae*, *Duke Mathematical Journal*, *Advances in Mathematics*, *Archives for Rational Mechanics and Analysis*, *Communications in Mathematical Physics*, *Journal of Mathematical Biology*.

Service as referee for funding agencies: Horizon 2020, FWF Austrian Science Fund, Israel Science Foundation.