

Prof. Giuseppe Mulone

General Info

- Name: **Giuseppe Mulone**
- Date and place of birth: October 15th, 1951, Canicattì (AG) - Italy
- Address: Viale Riccardo Wagner 16, 92024 Acireale (CT) - Italy
- E-mail: mulone@dmf.unict.it
- Home Page: <http://www.dmf.unict.it/mulone/>
- Nationality: Italian

Education

- Master (Degree) *in Mathematics, summa cum laude*, University of Catania, July 11th, 1973.

Distinctions, Awards:

From 2008: Member of the Accademia Zelantea di Acireale

From 2015: Member of the Accademia Peloritana dei Pericolanti di Messina

From 2014: Member of the Accademia Gioienia di Catania

Google Scholar Citations

<https://scholar.google.it/citations?user=i85f6agAAAAJ>

Positions

- **C.N.R. Grant in Mathematical Physics** at Seminario Matematico of Catania University, October 1st, 1973 – October 31st, 1974
- Winner of a competition for a “**Contratto quadriennale di Ricerca**” of Mathematics, University of Catania, December 21st, 1978 – December 18th, 1981 at *Cattedra di Meccanica Razionale della Facoltà di Scienze Matematiche Fisiche e Naturali*.
- “**Professore Incaricato**” of Calculus II, at Engineering Faculty of University of Catania, December 21st, 1978 – December 18th, 1981.
- “**Professore Incaricato**” of Mathematics, at Natural Science Faculty of University of Catania, December 21st, 1978 – December 18th, 1986.
- **Researcher** MAT/07 (Mathematical Physics), University of Catania, December 19th, 1981 – January 28th, 1986.
- **Associate Professor** MAT/07 (Mathematical Physics), University of Catania, January 29th, 1986 – October 31st, 1994.
- **Professor** MAT/07 (Mathematical Physics), University Federico II, Naples, November 1st, 1994. – October 31st, 1996.
- **Professor** MAT/07 (Mathematical Physics), University of Catania, from November 1st, 1996.
- **Chair of Department of Mathematics and Computer Sciences**, University of Catania, since November 1st, 2008 to 31 October 2015
- **Elected member of *Senato Accademico* of University of Catania**, since June 2012 to 31 October 2015
- **Member of the Management Board of the University of Catania**, since March 2017.
- **Member of the Editorial board of *Ricerche di Matematica* (Springer)** since 2016.

Society

I.S.I.M.M. (International Society for the Interaction of Mechanics and Mathematics)

G.N.F.M. (Gruppo Nazionale Fisica Matematica)

U.M.I.(Unione Matematica Italiana)

(Some) Organizing Activity

- Chair of the Organizing Committee and Member the Scientific Committee of the International Workshop *Waves and Stability in Continuous Media (WASCOM)*, Acireale - Catania, September 1995.
- Chair of the Organizing Committee and Co-Chair of the Scientific Committee of the International Workshop *Waves and Stability in Continuous Media (WASCOM)*, Acireale - Catania, September 2005.
- Chair of the Organizing Committee and Co-Chair of the Scientific Committee of the International Workshop *Fifth China-Italy Colloquium on Applied Mathematics*, Acireale, September 27–30, 2010.
- Chair of the Organizing Committee and Co-Chair of the Scientific Committee of the International Workshop *Waves and Stability in Continuous Media (WASCOM)*, Catania, June 2021.

Other Scientific Activities

- He has participated in *more than 70* International and National Meetings and Workshops. In many of them he has been Invited Speaker.
- Professor of the course on *Qualitative analysis in fluid dynamics* at the XXIII Summer School of Mathematical Physics in Ravello, Italy (September 1998).
- *Visiting Professor* at Southwest Normal University Chongqing (October, 2002, October, 2004, September 2006, October 2008)
- *Seminars and scientific research* at Durham University, UK (September, 2001, October, 2006)

- He has been Member of the Editorial Board of *Ricerche di Matematica* and *Le Matematiche*
- *Referee* for many journals (among the others: Proc. Roy Soc London A, J. Math. Anal. Appl., Nonlinear Analysis, Int. J. Eng. Science, Math. Meth. Appl. Sci., Appl. Anal., Continuum Mech. and Thermodyn., Acta Mechanica, Mechanics Research Communications, etc.)
- He has attended to many selection boards for “Full Professor, Associate Professor and Researcher” Positions in Italy in the Scientific Group of Mathematical Physics.

Research Projects

- Coordinator of Local research Project (PRA) on “Qualitative analysis and stability in Fluid dynamics”, “Qualitative analysis and stability in Fluid dynamics, Thermodynamics and Biomathematics” (1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008).
- Local Coordinator of a PRIN Project 2000 Coordinator Prof. Ruggeri (Non Linear Mathematical Problems of Wave Propagation and Stability in Models of Continuous Media)
- Local Coordinator of a PRIN Project 2003 Coordinator Prof. Ruggeri (Nonlinear Mathematical Problems of Wave Propagation and Stability in Models of Continuous Media)
- Local Coordinator of a PRIN Project 2005 Coordinator Prof. Ruggeri (Nonlinear Propagation and Stability in Thermodynamical Processes of Continuous Media)
- Local Coordinator of a PRIN Project 2017 Principal Investigator Prof. Marco Sammartino (Multiscale phenomena in Continuum Mechanics: singular limits, off-equilibrium and transitions)

Research Activity

- Continuum mechanics: fluid dynamics and magnetofluid dynamics

- Bénard problems, convective instability
- Qualitative analysis and stability, optimal Lyapunov functions
- Flows in porous media
- Dynamical systems: autonomous and non-autonomous systems
- Wave propagation
- Mathematical models for biology, epidemic models
- Partial Differential Equations of parabolic type (reaction-diffusion equations), parabolic-hyperbolic equations
- Navier-Stokes systems

List of publications of G. Mulone

- [1] P Falsaperla, A Giacobbe, G Mulone, Stability of the Plane Bingham-Poiseuille Flow in an Inclined Channel, *Fluids* (August) 2020, **5**(3), 141; <https://doi.org/10.3390/fluids5030141>
- [2] P Falsaperla, A Giacobbe, G Mulone, Linear and nonlinear stability of magnetohydrodynamic Couette and Hartmann shear flows, *International Journal of Non-Linear Mechanics*, **123**, (July) 2020, 103490, <https://doi.org/10.1016/j.ijnonlinmec.2020.103490>
- [3] A Giacobbe, G Mulone, W Wang, Modeling eating disorders in young people, *Nonlinear Analysis: Real World Applications*, **53**, June 2020, 103064, <https://doi.org/10.1016/j.nonrwa.2019.103064>
- [4] Barletta, A., Mulone, G. The energy method analysis of the Darcy-Bernard problem with viscous dissipation. *Continuum Mech. Thermodyn.* (2020). <https://doi.org/10.1007/s00161-020-00883-3>
- [5] Falsaperla, P., Giacobbe, A., Mulone, G. Stability of laminar flows in an inclined open channel. *Ricerche Mat.* (2020). <https://doi.org/10.1007/s11587-020-00487-8>
- [6] P Falsaperla, A Giacobbe, G Mulone 2019, Nonlinear stability results for plane Couette and Poiseuille flows *Physical Review E* **100** (1), 013113 doi:10.1103/PhysRevE.100.013113
- [7] P Falsaperla, A Giacobbe, G Mulone 2019, Inclined convection in a porous Brinkman layer: linear instability and nonlinear stability *Proceedings of the Royal Society A* **475** (2223), 20180614. doi:10.1098/rspa.2018.0614
- [8] P Falsaperla, G Mulone 2018, Thermal convection in an inclined porous layer with Brinkman law *Ricerche di Matematica* **67** (2), 983–999. doi:10.1007/s11587-018-0371-2

- [9] A Giacobbe, G Mulone 2018, Stability of ordered equilibria *Journal of Mathematical Analysis and Applications* **462** (2), 1298–1308. doi:10.1016/j.jmaa.2018.02.040
- [10] B Buonomo, A Giacobbe, G Mulone 2018, Analysis of an epidemic model with peer-pressure and information-dependent transmission with high-order distributed delay *Ricerche di Matematica*, 1–16. *Ricerche di Matematica*, 1-16. doi:10.1007/s11587-018-0419-3
- [11] P Falsaperla, A Giacobbe, S Lombardo, G Mulone 2017, Stability of hydromagnetic laminar flows in an inclined heated layer *Ricerche di Matematica* 66 (1), 125–140. doi:10.1007/s11587-016-0290-z
- [12] P Falsaperla, A Giacobbe, G Mulone 2017, On the hydrodynamic and magnetohydrodynamic stability of an inclined layer heated from below *Rendiconti Lincei-Matematica e Applicazioni* **28** (3), 515–535
- [13] A Giacobbe, G Mulone, B Straughan, W Wang 2017, Modelling drinking with information *Mathematical Methods in the Applied Sciences* **40** (12), 4400–4411 <https://doi.org/10.1002/mma.4312>
- [14] P. Falsaperla, G. Mulone, B. Straughan 2016, Bidispersive inclined convection, *Proc. Roy. Soc. A* **472** Issue 2192, 20160480 <https://doi.org/10.1098/rspa.2016.0480>
- [15] P. Falsaperla, A. Giacobbe, S. Lombardo, G. Mulone 2016, Laminar hydromagnetic flows in an inclined heated layer, *AAPP, Atti della Accademia Peloritana dei Pericolanti* DOI: 10.1478/AAPP.941A5, Vol. 94, No. 1, A5-1 – A5-15.
- [16] C. Ciarcià, A. Giacobbe, P. Falsaperla, G. Mulone 2015, A mathematical model of anorexia and bulimia, *Mathematical Methods in the Applied Sciences*, Vol. 38, Issue 14, pages 2937–2952, DOI: 10.1002/mma.3270
- [17] S. Lombardo, G. Mulone 2014, Induction magnetic stability with a two-component velocity field, *Mechanics Research Communications* Vol. 62, pages 89–93, doi:10.1016/j.mechrescom.2014.09.006

- [18] Giacobbe, G. Mulone *2014*, Stability in the Rotating Bénard Problem and Its Optimal Lyapunov Functions, *Acta Applicandae Mathematicae*, vol. 132, Issue 1, pp.307-320, doi:10.1007/s10440-014-9905-0.
- [19] P. Falsaperla, A. Giacobbe, G. Mulone *2013*, Some results in the non-linear stability for rotating Bénard problem with rigid boundary condition. *Atti Dell'Accademia Peloritana Dei Pericolanti*, vol. 91, p. A9-1-A9-10, ISSN: 1828-6550, doi: 10.1478/AAPP.91S1A9
- [20] P. Falsaperla, A. Giacobbe and G. Mulone *2012*, Double diffusion in rotating porous media under general boundary conditions . *International Journal Of Heat And Mass Transfer*, vol. 55, p. 2412-2419, ISSN: 0017-9310, doi: 10.1016/j.ijheatmasstransfer.2011.12.035
- [21] Falsaperla P, Giacobbe A, Mulone G *2012*, Does symmetry of the operator of a dynamical system help stability?. *Acta Applicandae Mathematicae*, vol. 122, p. 239-253, ISSN: 0167-8019, doi: 10.1007/s10440-012-9740-0
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- [23] W. Wang and G. Mulone *2011*, Global analysis of a stage-structured model with population diffusion. *Applicable Analysis* Vol. 90, Issue 1, pp. 253-261. doi:10.1080/00036811003735915.
- [24] P. Falsaperla, G. Mulone and B. Straughan *2011*, Inertia effects on rotating porous convection. *Int. J. Heat Mass Transfer*, Vol. 54, pp. 1352-1359. doi:10.1016/j.ijheatmasstransfer.2010.12.006.
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- [28] G. Mulone *2010*, Some stability results for reaction-diffusion systems and applications to biology and ecology, Proceedings of Second International Conference on New Trends in Fluid and Solid Models, VIETRI, Salerno, 19 - 21 marzo, 2009 (*to appear*).
- [29] P. Falsaperla, G. Mulone and B. Straughan *2010*, Rotating porous convection with prescribed heat flux, *Int. J. Eng. Science*, Vol. 48 n.7-8, pp. 685-692. doi:10.1016/j.ijengsci.2010.02.005.
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