Giuseppe Mulone

General Info

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

Education

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

Distinctions, Awards:

2008: Elected Member of the Accademia Zelantea di Acireale
2015: Elected Member of the Accademia Peloritana dei Pericolanti di Messina
2014: Elected 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 1^{st}, 1973 – October 31^{st}, 1974
- Winner of a competition for a "**Contratto quadriennale di Ricerca**" of Mathematics, University of Catania, December 21^{st}, 1978 – December 18^{th}, 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 21^{st}, 1978 – December 18^{th}, 1981.
- "**Professore Incaricato**" of Mathematics, at Natural Science Faculty of University of Catania, December 21^{st}, 1978 – December 18^{th}, 1986.
- **Researcher** MAT/07 (Mathematical Physics), University of Catania, December 19^{th}, 1981 – January 28^{th}, 1986.
- **Associate Professor** MAT/07 (Mathematical Physics), University of Catania, January 29^{th}, 1986 – October 31^{st}, 1994.
- **Professor** MAT/07 (Mathematical Physics), University Federico II, Naples, November 1^{st}, 1994. – October 31^{st}, 1996.
- **Professor** MAT/07 (Mathematical Physics), University of Catania, from November 1^{st}, 1996.
- **Chair of Department of Mathematics and Computer Sciences**, University of Catania, since November 1^{st}, 2008 to 31 October 2015
- **Elected member of *Senato Accademico* of University of Catania,** since June 2012 to 31 October 2015

- 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.

Other Scientific Activities

- He has participated in *more than 60* 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)

- *Visiting Professor* 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 Ordinario, Associato and Ricercatore 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)

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] G. Mulone, E. Oliveri and M.A. Rigano *1977* Trasformazioni semicanoniche per i sitemi a struttura canonica, *Atti Acc.Gioienia Catania, Ser. VII,* **9**, 39–47.

[2] G. Mulone and A. Sapienza *1977* Alcune condizioni per l'esistenza di trasformazioni semicanoniche lineari, *Atti Acc.Gioienia Catania, Ser. VII,* **9**, 183–188.

[3] G. Mulone and A. Sapienza *1977* Alcune condizioni per l'esistenza di trasformazioni semicanoniche. Caso generale., *Atti Acc.Gioienia Catania, Ser. VII,* **9**, 275–278.

[4] A.M. Anile, G. Mulone and S. Pluchino *1979* Critical time for shock formation in radiative magnetogasdynamics, *Wave motion*, **1**, 163–175.

[5] A.M. Anile, G. Mulone and S. Pluchino *1980* Critical time for asymptotic acoustic waves in a gravitational atmosphere, *Wave motion*, **2**, 267–275.

[6] G. Mulone and F. Salemi *1981* On the continuous dependence of the MHD equations with Hall current in unbounded domains, *Rend. Accad. Sci. Fis. Mat. Napoli*, *Ser.IV* **48**, 253–273.

[7] G. Mulone and F. Salemi *1982* Sull'esistenza di moti idrodinamici stazionari in domini con porzioni di contorno libero, *Atti* del convegno di Fisica Matematica su "*Dinamica dei Continui fluidi* e *dei Gas ionizzati*" (Trieste 1982), 223–235.

[8] F. Salemi and G. Mulone *1982* Sull'attrattività della quiete di un fluido incompressibile in un dominio a pareti non completamente rigide, *Atti* del convegno di Fisica Matematica su "*Dinamica dei Continui fluidi* e *dei Gas ionizzati*" (Trieste 1982), 293–301.

[9] G. Mulone and F. Salemi *1982* Teoremi di esistenza e decadimento per le equazioni di Navier-Stokes con condizioni al contorno di tipo misto, *Atti* del congresso Nazionale *AIMETA* (Genova 1982), 172–181.

[10] G. Mulone and F. Salemi *1983* On the existence of hydrodynamic motion in a domain with free boundary type conditions, *Meccanica*, **18**, 136–144.

[11] G. Mulone and F. Salemi *1983* Sulla stabilità non lineare dei moti idrodinamici stazionari in domini limitati con condizioni al contorno del tipo free - boundary, *Atti* del II Convegno "*Giornate di lavoro* su *onde* e *stabilita' nei mezzi continui*" (Cosenza 1983), 223–232.

[12] G. Mulone and F. Salemi *1983* Sul principio di linearizzazione dei moti idrodinamici stazionari in domini limitati con condizioni al contorno del tipo free - boundary, *Atti* del II Convegno "*Giornate di lavoro* su *onde* e *stabilita' nei mezzi continui*" (Cosenza 1983), 233–239.

[13] G. Mulone and S. Rionero *1984* Existence, uniqueness and regularity theorems for stationary thermo-diffusive mixture in a mixed problem, *Atti* del "*First Workshop on Mathematical aspects on fluid and plasma dynamics*" (Trieste 1984), 419–427.

[14] S. Rionero and G. Mulone *1984* On the stability of a thermodiffusive mixture in a mixed problem, *Atti* del VII Congresso nazionale *AIMETA* (Trieste 1984), 113–124.

[15] G. Mulone and F.Salemi *1985* On the hydrodynamic motion in a domain with mixed boundary conditions: Existence, uniqueness, stability and linearization principle, *Ann. Mat. Pura App.* **139**, 147–174.

[16] S. Rionero and G. Mulone *1985* Nonlinear stability of the Bénard problem for a binary fluid mixture with rotation, *Proc* III *Conf. on* "*Waves and stability in continuous media*" (Eds. Maiellaro e Palese), (Bari 1985), 379–394.

[17] S. Rionero and G. Mulone *1987* On the non-linear stability of a thermodiffusive fluid mixture in a mixed problem, *J. Mat. Anal. App.* **124**, 165–188.

[18] S. Rionero and G. Mulone *1988* Existence and uniqueness theorems for a steady thermo-diffusive mixture in a mixed problem, *Nonlinear Analysis* **12** (No. 5), 473–494.

[19] S. Rionero and G. Mulone *1988* A nonlinear stability analysis of the magnetic Bénard problem through the Lyapunov direct method *Arch. Rational Mech. Anal.*, **103**, 347–368.

[20] S. Rionero and G. Mulone *1988* On a maximum problem governing the non linear stability of rotating Bénard problem, *Ricerche Mat.*, **37**, 177–185.

[21] G. Mulone and F. Salemi *1988* Some continuous dependence theorems in MHD with Hall and ion-slip currents in unbounded domains, *Rend. Accad. Sci. Fis. Mat. Napoli*, (Ser. IV) **55**, 139–152.

[22] G. Mulone *1988* On the stability of a rotating fluid with Prandtl numbers less than 1, *Rend. Accad. Sci. Fis. Mat. Napoli, (Ser. IV)* **55**, 123–138.

[23] G. Mulone *1989* On the non-linear stability of parallel shear flows, *Proc.* 3^{th} *German-Italian Symp. "Applications of Mathematics in Industry and Thechnology", Siena 1988*, V. Boffi and H. Neunzert (Eds.), Teubner-Stuttgart, 209–218.

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[25] G. Mulone and S. Rionero *1989* On the non-linear stability of the rotating Bénard problem via the Lyapunov direct method, *J. Mat. Anal. Appl.*, **144**, 109–127.

[26] S. Rionero and G.Mulone *1989* On the stability of a mixture in a rotating layer via the Lyapunov second method, *Z. angew. Math. Mech.*, **69**, 441–446.

[27] S. Rionero and G. Mulone *1991* On the nonlinear stability of parallel shear flows, *Continuum Mech. Thermod.* **3**, 1–11.

[28] S. Rionero, G. Mulone and F. Salemi *1991* Eds. of the VI International Conference on Waves and Stability in Continuous Media. Proceedings of the conference held in Acireale, May 27–June 1, 1991. Le Matematiche (Catania) 46, no. 1. Dipartimento di Matematica dell'Università di Catania, Catania, 1991. pp. 1–526.

[29] G. Mulone *1991* On the stability of plane parallel convective flow, *Acta Mechanica* **87**, 153–162.

[30] G. Mulone *1991* On the Lyapunov stability of a plane parallel convective flow of a binary mixture, *Le Matematiche* **46**, 283–294, 1991.

[31] G. Mulone *1991* On the Stability of a Plane Parallel Convective Mixture through the Lyapunov Second Method, *Atti Accad. Peloritana Peric. (Cl. I) Sci. Mat. Fis. Nat.* **68**, (Supp. I), 491–516.

[32] G. Mulone and F. Salemi *1992* On the Nonlinear Stability of Laminar Flow between Parallel Planes in the Presence of a Coplanar Magnetic Field, *Ricerche di Matematiche*, **41**, suppl. 209–225.

[33] G. Mulone, S. Rionero and B. Straughan *1992* Continuous Dependence on Modelling for an improperly posed problem for the equations of magnetohydrodynamics, *Ricerche di Matematiche*, **41**, suppl. 197–207.

[34] G. Mulone and S. Rionero *1993* On the nonlinear stability of the magnetic Bénard problem with rotation, *Z. Angew. Math. Mech.* , **73** 1, 35–45.

[35] G. Mulone, S. Rionero and B. Straughan *1994* Convection with temperature dependent viscosity and thermal conductivity: linear energy stability theory, *Rend. Accad. Sci. Fis. Mat. Napoli, (Ser. IV)* **61** 13–28.

[36] G.M ulone *1994* On the Nonlinear Stability of a Fluid Layer of a Mixture Heated and Salted from Below, *Continuum Mech. Thermodyn.* **6**, 161–184.

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on Waves and Stability in Continuous Media, Bologna, 1993, World Scientific, Ser. Advances Math. Appl. Sci. **23**, 289–294.

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