

Prof. Giuseppe Mulone

General Info

- Name: **Giuseppe Mulone**
- Date and place of birth: October 15th, 1951, [REDACTED]
- Address: [REDACTED]
- 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 Gioienna 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
- [22] G. Mulone and B. Straughan 2012, Modelling binge drinking. *Int J. of Biomathematics*, vol. 5, p. 1250005-1-1250005-14, doi:10.1142/S1793524511001453.
- [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.
- [25] P. Falsaperla, G. Mulone and B. Straughan 2010, Rotating porous convection with inertial effects and prescribed heat flux. *Int. J. Eng. Science* Vol. 48 n.7-8, pp. 685-692. doi:10.1016/j.ijengsci.2010.02.005.
- [26] G. Mulone, S. Rionero and W. Wang 2010, The effect of density-dependent dispersal on the stability of populations *Nonlinear Analysis*, Vol. 74, pp. 4831-4846. doi:10.1016/j.na.2011.04.055.

- [27] P. Falsaperla and G. Mulone *2010*, Long-wavelength instabilities in binary fluid layers. In: Proceedings *WASCOM 2009* World Scientific, Greco, Rionero and Ruggeri Eds. pp. 146–156.
- [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.
- [30] P. Falsaperla and G. Mulone *2010*, Stability in the rotating Bénard problem with Newton-Robin and fixed heat flux boundary conditions , *Mech. Res. Com.*, **37**, 122–128 DOI:10.1016/j.mechrescom.2009.11.002.
- [31] G. Mulone *2009*, Nonlinear stability for reaction-diffusion models, *New Trends In Fluid And Solid Models*, Proceedings of the International Conference in Honour of Brian Straughan Vietri sul Mare (SA), Italy, 28 February – 1 March 2008, World Scientific, Ciarletta, Fabrizio, Morro and Rionero Eds., Hackensack, NJ, USA, pp. 91–102
- [32] G. Mulone and B. Straughan *2009*, A note on heroin epidemics *Math. Biosc.*, **218**, 138–141. DOI:10.1016/j.mbs.2009.01.006.
- [33] G. Mulone and B. Straughan *2009*, Nonlinear stability for diffusion models in biology, *SIAM J. Appl. Math.* **69/6**, 1739–1758. DOI:10.1137/070697884.
- [34] G. Mulone and V.A. Solonnikov *2009*, Linearization principle for a system of equations of mixed type. *Nonlinear Anal. Theory, Methods & Applications*, **71**, 1019-1031. DOI: 10.1016/j.na.2008.11.023
- [35] F. Brini, G. Mulone and M. Trovato *2008*, On the magnetic Rayleigh-Bénard problem for compressible fluids, “*WASCOM 2007*”—*14th Conference on Waves and Stability in Continuous Media*, N. Mangano, R. Monaco, S. Rionero, T. Ruggeri, World Sci. Publishing, River Edge, NJ, 66–71.

- [36] G. Mulone 2008, Problems of stability and waves in biological systems, “WASCOM 2007”—14th Conference on Waves and Stability in Continuous Media, N. Manganaro, R. Monaco, S. Rionero, T. Ruggeri, World Sci. Publishing, River Edge, NJ, 433–442.
- [37] S. Lombardo, G. Mulone and M. Trovato 2008, Nonlinear stability in reaction-diffusion systems via optimal Lyapunov functions *J. Math. Anal. Appl.* **342** n. 1, 461–476. DOI:10.1016/j.jmaa.2007.12.024.
- [38] S. Lombardo, G. Mulone and M. Trovato 2008, Nonlinear stability of an epidemic model of the spatial spread of rabies among foxes via the canonical reduction method. *Mathematical Physics models and engineering sciences*. Liguori Napoli, 325-334.
- [39] S. Lombardo, G. Mulone and M. Trovato 2007, Analysis of the Lorenz system and the Bénard problem with rotation via the canonical reduction method, *Proc. Asymptotic Methods in Nonlinear Wave Phenomena*, World Scientific Publishing Co. Pte. Ltd. T. Ruggeri and M. Sammartino Eds., Singapore, 107–118.
- [40] G. Mulone, B. Straughan and W. Wang 2007, Stability of Epidemic Models with Evolution *Stud. Appl. Math.*, **118**, 117–132. DOI:10.1111/j.1467-9590.2007.00367.x
- [41] S. Lombardo, G. Mulone and M. Trovato 2006, A general analytical procedure to obtain optimal Lyapunov functions in reaction-diffusion systems, *Rend. Circolo Mat. Palermo*, ser. II, Suppl. **78**, 173–185.
- [42] W. Wang, P. Fergola, S. Lombardo and G. Mulone 2006, Mathematical models of innovation diffusion with stage structure, *Appl. Math. Modelling*, **30**, 129–146 DOI:10.1016/j.apm.2005.03.011
- [43] G. Mulone and B. Straughan 2006, An operative method to obtain necessary and sufficient stability conditions for double diffusive convection in porous media, *ZAMM* **86**, n. 7, p. 507–520. DOI:10.1002/zamm.200510272
- [44] G. Mulone 2006, An operative method to define generalized-energy functionals in PDEs and in convection problems, “WASCOM 2005”—13th Conference on Waves and Stability in Continuous Media,

- R.Monaco, G. Mulone, S. Rionero, T. Ruggeri, 390–401, World Sci. Publishing, River Edge, NJ.
- [45] R. Kaiser and G. Mulone 2005, A note on nonlinear stability of plane parallel shear flows, *J. Math. Anal. Appl.* **302**, n.2, 543–556. DOI:10.1016/j.jmaa.2004.08.025
- [46] S. Lombardo and G. Mulone 2005, Necessary and Sufficient Stability Conditions via the Eigenvalues - Eigenvectors Method: an Application to the Magnetic Bénard Problem, *Nonlinear, Anal.* **63** /5-7, e2091-e2101. DOI:10.1016/j.na.2004.09.003
- [47] G. Mulone 2004 , Stabilizing effects in dynamical systems: linear and nonlinear stability conditions, *Far East J. Appl. Math.* **15**, n.2, 117–134.
- [48] G. Mulone 2004, Nonlinear stability in fluid-dynamics in the presence of stabilizing effects and the choice of a measure of perturbations. “WASCOM 2003”—12th Conference on Waves and Stability in Continuous Media, Eds. R.Monaco, S. Pennisi, S. Rionero, T. Ruggeri, 352–365, World Sci. Publishing, River Edge, NJ.
- [49] G. Mulone 2004, Stabilizing effects in fluid dynamics problems. *New trends in mathematical physics*, 121–131, World Sci. Publ., Hackensack, NJ.
- [50] W. Wang, G. Mulone 2003, Threshold of Disease Transmission in a Patch Environment, *J. Mat. Anal. Appl.*, **285**, 321-335. DOI:10.1016/S0022-247X(03)00428-1
- [51] G. Mulone and S. Rionero 2003, Necessary and sufficient conditions in the magnetic Bénard problem, *Arch. Rational Mech. Anal.* **166** no. 3, 197–218. DOI 10.1007/s00205-002-0230-9
- [52] S. Lombardo, G. Mulone 2003, Nonlinear stability and convection for laminar flows in a porous medium with Brinkman law, *Math. Met. Appl. Sci.* **26**, no. 6, 453–462. DOI: 10.1002/mma.333
- [53] S. Lombardo, G. Mulone 2002, Necessary and sufficient conditions of global nonlinear stability for rotating double-diffusive convection

in a porous medium *Continuum Mech. Thermodyn.*, **14**, 527–540.
DOI:10.1007/s001610200091

- [54] S. Lombardo, G. Mulone 2002, Double-diffusive convection in porous media: the Darcy and Brinkman models, *Proc. WASCOM 2001, Porto Ercole, June 3–9, 2001*, Eds. R.Monaco, M. P. Bianchi, S.Rionero, World Scientific, Singapore, 277-289.
- [55] S. Lombardo, G. Mulone, and B. Straughan 2001, Nonlinear stability in the Bénard problem for a double-diffusive mixture in a porous medium, *Math. Met. Appl. Sci.*, **24**, N.16, 1229–1246. DOI: 10.1002/mma.263
- [56] S. Lombardo, G. Mulone and S. Rionero 2001, Global nonlinear exponential stability of the conduction-diffusion solution for Schmidt numbers greater than Prandtl numbers, *J. Mat. Anal. Appl.* , **262**, n.1, 191–207. DOI:10.1006/jmaa.2001.7556
- [57] W. Wang, G. Mulone, F. Salemi and V. Salone 2001, Permanence and stability of a stage-structured predator-prey model, *J. Mat. Anal. Appl.*, **262**, n.2, 499-528. DOI:10.1006/jmaa.2001.7543
- [58] W. Wang, G. Mulone, F. Salemi and V. Salone 2001, Global stability of discrete population models with time delays and fluctuating environment, *J. Mat. Anal. Appl.*, **264**, n.1, 147–167. DOI:10.1006/jmaa.2001.7666
- [59] G. Mulone 2001, Nonlinear stability in convection problems for different Prandtl numbers, *Proc. “WASCOM 99”, Vulcano 7–12 June 1999*, Eds. V. Ciancio, A. Donato, F. Oliveri, S. Rionero, World Scientific, Singapore, 340–353.
- [60] W. Wang, G. Mulone, F. Salemi and V. Salone 2001, Dynamics of structured predator-prey model, *Proc. “WASCOM 99”, Vulcano 7–12 June 1999*, Eds. V. Ciancio, A. Donato, F. Oliveri, S. Rionero, World Scientific, Singapore, 473–479.
- [61] S. Lombardo, G. Mulone and S. Rionero 2000, Global stability in the Bénard problem for a mixture with superimposed plane parallel shear flows, *Math Meth. Appl. Sci.*, **23**, n.16, 1447-1465. DOI:10.1002/1099-1476

- [62] G. Mulone and S. Rionero 1998, Unconditional nonlinear exponential stability in the Bénard problem for a mixture: necessary and sufficient conditions, *Rend. Mat. Acc. Lincei*, s.9, **9**, 221–236.
- [63] G. Mulone 1998, On the nonlinear stability of the Bénard problem for a mixture: conditional and unconditional stability, *Rend. Circ. Mat. Palermo*, Ser. II, Suppl. **57**, 347–356.
- [64] G. Mulone, F. Salemi and W. Wang 1998, Permanence of Population Models with Toxicant Input and Diffusion, *Bull. Biomath.*, **1**, n. 4, 16–29.
- [65] G. Mulone and S. Rionero 1997, The rotating Bénard problem: new stability results for any Prandtl and Taylor numbers, *Continuum Mech. Termodyn.*, **9** 347–363. DOI:10.1007/s001610050076
- [66] G. Mulone and S. Rionero 1996, Some recent results on the onset of convection, *Rend. Circ. Mat. Palermo*, ser. II, suppl. **45**, 465–476.
- [67] G. Mulone, S. Rionero and B. Straughan 1996, Unconditional nonlinear stability in a polarized dielectric liquid *Rend. Acc. Lincei*, s. 9, **7**, n.4, 241–252.
- [68] G. Mulone, S. Rionero and B. Straughan, 1995, Stabilità non lineare incondizionata per la convezione elettro-termica in un liquido polarizzato, *Atti XII Congr. AIMETA*, Napoli 1995, vol. V, 45–50.
- [69] G. Mulone and V.A. Solonnikov 1995, On an initial boundary-value problem for equations of magnetohydrodynamics with the Hall and ion-slip effects, *Zapiski. Nauchn. Semin. Pomi*, **221**, 167–184.
- [70] V.A. Solonnikov and G. Mulone 1995, On the solvability of some initial boundary value problems of magnetofluidmechanics with Hall and ion-slip effects, *Rend. Mat. Acc. Lincei*, s. 9, **6**, n.2, 117–132.
- [71] G. Mulone 1995, On the nonlinear exponential stability of the conduction – diffusion solution of a mixture in a layer, *Proc. of 7th Conference on Waves and Stability in Continuous Media*, Bologna, 1993, World Scientific, Ser. Advances Math. Appl. Sci. **23**, 289–294.

- [72] G. Mulone and S. Rionero 1994, On the stability of the rotating Bénard problem, *Bull. Tech. Univ. Istanbul* **47**, 181–202.
- [73] G. Mulone 1994, On the Nonlinear Stability of a Fluid Layer of a Mixture Heated and Salted from Below, *Continuum Mech. Thermodyn.* **6**, 161–184.
- [74] 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.
- [75] 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.
- [76] 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.
- [77] 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.
- [78] 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.
- [79] G. Mulone 1991, On the Lyapunov stability of a plane parallel convective flow of a binary mixture, *Le Matematiche* **46**, 283–294, 1991.
- [80] G. Mulone 1991, On the stability of plane parallel convective flow, *Acta Mechanica* **87**, 153–162.
- [81] 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.

- [82] S. Rionero and G. Mulone 1991, On the nonlinear stability of parallel shear flows, *Continuum Mech. Thermod.* **3**, 1–11.
- [83] 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.
- [84] 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.
- [85] G. Mulone 1989, On the stability of plane parallel convective flow, *Proc. V Meeting on Waves and Stability in Continuous Media* S. Rionero Ed. *World Scientific Ser. Adv. Mat. Appl. Sci.* **4** 1989, 267–272.
- [86] G. Mulone 1989, On the non-linear stability of parallel shear flows, *Proc. 3th German-Italian Symp. “Applications of Mathematics in Industry and Thechnology”*, Siena 1988, V. Boffi and H. Neunzert (Eds.), Teubner-Stuttgart, 209–218.
- [87] 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.
- [88] 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.
- [89] S. Rionero and G. Mulone 1988, On a maximum problem governing the non linear stability of rotating Bénard problem, *Ricerche Mat.*, **37**, 177–185.
- [90] 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.
- [91] 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.

- [92] S. Rionero and G. Mulone 1987, On the non-linear stability of a thermo-diffusive fluid mixture in a mixed problem, *J. Mat. Anal. App.* **124**, 165–188.
- [93] 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.
- [94] 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.
- [95] 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.
- [96] 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.
- [97] 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.
- [98] 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.
- [99] G. Mulone and F. Salemi 1983, On the existence of hydrodynamic motion in a domain with free boundary type conditions, *Meccanica*, **18**, 136–144.
- [100] 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.

- [101] 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.
- [102] 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.
- [103] 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.
- [104] A.M. Anile, G. Mulone and S. Pluchino 1980, Critical time for asymptotic acoustic waves in a gravitational atmosphere, *Wave motion*, **2**, 267–275.
- [105] A.M. Anile, G. Mulone and S. Pluchino 1979, Critical time for shock formation in radiative magnetogasdynamics, *Wave motion*, **1**, 163–175.
- [106] G. Mulone and A. Sapienza 1977, Alcune condizioni per l'esistenza di trasformazioni semicanoniche. Caso generale., *Atti Acc. Gioiemia Catania, Ser. VII*, **9**, 275–278.
- [107] G. Mulone and A. Sapienza 1977, Alcune condizioni per l'esistenza di trasformazioni semicanoniche lineari, *Atti Acc. Gioiemia Catania, Ser. VII*, **9**, 183–188.
- [108] G. Mulone, E. Oliveri and M.A. Rigano 1977, Trasformazioni semicanoniche per i sistemi a struttura canonica, *Atti Acc. Gioiemia Catania, Ser. VII*, **9**, 39–47.