

C.V. of Prof. Roberto CIANCI .

Born in Genoa 5 February 1953. Degree in Physics with honors with 110 December 15, 1975. Professor of Mathematical Physics at the Faculty of Engineering of Genoa.

He is author of more than 80 scientific articles, a monograph; he is editor of 5 books of Proceedings and organizer and chairman of various international scientific conferences .

#### Teaching Activities of Prof. Roberto CIANCI.

1. Dal 14/1/1980 al 31/10/1983 is Professor of Geometry at the Engineering Faculty of Udine
2. Dal 1/11/1983 al 31/10/1989 is Professors of Mathematics at the University of Milan
3. Dal 1/11/89 is Associate Professor of Mathematical Physics at the Engineering Faculty of Genoa
4. Dal 1/11/2000 is Full Professor of Mathematical Physics at the Engineering Faculty of Genoa

Prof. Cianci is now a member of DIME, the Department of Mechanics, Energetics, Managing and Transport-Mathematical Section.

He teaches the following accademic courses:

1. Mathematical Physics II for Civil and Environmental Engineering,
2. Mathematical Methods for Engineering for Mechanical Engineering,
3. Mathematical Physics for course of Yacht Design Engineering.

Further,

- a) He teaches the PhD course of Partial differential equations and applications to the Graduate School of Science and Technology for Engineering.
- b) He teaches the research course at the “ Continuous Modeling and Simulation” program of the “International Mediterranean and Latin-America Council for Computer Simulation” Society.
- c) He teaches lectures for master courses: Modelling and Simulation EPF and EPA at the Telecommunications Army School in Chiavari.

#### Scientific Activities of Prof. Roberto CIANCI

The scientific activity of Prof. Cianci is developed on two closely related research areas.

A first one more theoretical, related to the study of the theories with infinite degrees of freedom - the theories of the gravitational field – classic and alternative– and the study of the related governing systems of partial differential equations , particularly the research of the first integrals. The specific knowledge of differential equations developed in this area of research is the fundamental link with the themes of the next paragraph .

A second area of research more related to Engineering topics such as:

1. The diffusion and convection of a fluid in non-homogeneous. In this area are used tools, knowledge and techniques developed or in the process of research in the theory of continuous media.

2. Modeling and simulation for the security and management of catastrophic and terroristic events. Problems of controlling the spread of toxic gases.
3. Models with finite and infinite degrees of freedom, continuum mechanics; special materials and non local constitutive relation materials.

Prof. R. Cianci

1. Is the Director of the PhD Program in Engineering Machines and systems for energy, environment and transport.
2. Is the Director of the PhD address in Mathematics and Engineering Simulation.
3. is a member of SIMAI, the Italian Society of Applied and Industrial Mathematics.
4. is the Sigrav Coordinator for the Mathematical Physics research program.
5. is a Directional member of the Liophant Society of Simulation.
6. is the coordinator of the "Continuous Modeling and Simulation" Scientific program of the International Mediterranean and Latin-America Council for Computer Simulation organization.

Some scientific papers:

1. M. MASSABO', CIANCI R., O. PALADINO (2011). An Analytical Solution of the Advection Dispersion Equation in a Bounded Domain and Its Application to Laboratory Experiments. JOURNAL OF APPLIED MATHEMATICS, vol. 2011; p. 1-14, ISSN: 1110-757X, doi: 10.1155/2011/493014
2. ALBEVERIO S, CIANCI R., KHRENNIKOV Y (2009). p-A valued quantization. P-ADIC NUMBERS, ULTRAMETRIC ANALYSIS, AND APPLICATIONS, vol. 1; p. 91-104, ISSN: 2070-0466, doi: 10.1134/S2070046609020010
3. CIANCI R., KHRENNIKOV Y, ALBEVERIO S (2009). Operator calculus for p-A valued symbols . RENDICONTI DEL SEMINARIO MATEMATICO, vol. 1; p. 1-15, ISSN: 0373-1243
4. CAPOZZIELLO S, STORNAIOLO C, CIANCI R. (2008). S VIGNOLO FR gr. with torsion: a geometric approach. INTERNATIONAL JOURNAL OF GEOMETRIC METHODS IN MODERN PHYSICS, vol. 5; p. 765-788, ISSN: 0219-8878
5. S CAPOZZIELLO, CIANCI R., C STORNAIOLO, S VIGNOLO (2008). FR cosm. with torsion. PHYSICA SCRIPTA, vol. 78; p. 065010-065019, ISSN: 0031-8949, doi: 10.1088/0031-8949/78/06/065010
6. CAPOZZIELLO S, STORNAIOLO C, CIANCI R., VIGNOLO S (2007). FR g. with torsion: the Metric-Affine approach. CQG, vol. 24; p. 6417-6430, ISSN: 0264-9381, doi: 10.1088/0264-9381/24/24/015
7. CIANCI R., MASSABO' M, PALADINO O (2007). Some analytical solutions for two-dimesional convection-dispersion equation in cylindrical geometry. ENVIRONMENTAL MODELLING & SOFTWARE, vol. 21; p. 681-688, ISSN: 1364-8152
8. ALESSANDRI A, CIANCI R., M. GAGGERO, R. ZOPPOLI (2010). Approximate Solution of Feedback Optimal Control Problems for Distributed Parameter Systems. In: NOLCOS. United States
9. BRUZZONE A, REVERBERI A, AMBRA R, CIANCI R. (2009). Modeling Human Modifier Diffusion. In: Proceeding of AMS 2009. Singapore, 2009
10. BRUZZONE A, REVERBERI A, AMBRA R, CIANCI R., BOCCA E, FUMAGALLI M (2009). Human Modifier Diffusion in Social Networks. In: Interservice/Industry Training, Simulation and Education Conference (I/ITSEC). (pp. 1-7).
11. Carloni S., Vignolo S. Cianci R., Non minimally coupled condensate cosmologies: a phase space analysis, Classical and Quantum Gravity, 2014, accepted for publication.

12. Bruzzone A.G, Cianci R, Longo F., Cantice G, Poggi S (2010). Simulation Integrated with Web 3.0 as Smart Support for Command and Control. In: Proceedings of the 9th International Conference on Modeling and Applied Simulation. Fes (Morocco), October 13-15, FES, vol. I, p. 65-72, ISBN/ISSN: 2-9524747-5-3
13. Cianci R., Bruzzone A., Sburlati R. The diffusion problem of toxic gases in a tunnel. The pump absorption model., *Acta Applicandae Mathematicae*, 2014, *Acta Appl Math* (2014) 132:213–224, DOI 10.1007/s10440-014-9896-x
14. Cianci R. , Bruzzone A., The diffusion of toxic gases due to an explosion in a tunnel. An absorption pump model., *AMS2012 Conference Proceedings*, Davis D'Abbass, ed. Manila, Indonesia, 2012
15. Cianci R., Sburlati R. ,The multi pump absorption model for the containment of toxic gases in a tunnel. , *The International Conference On Advances in Applied Science and Environmental Engineering - ASEE 2014.* , Kuala Lumpur, Malaysia during 02-03 August, 2014. , 10.15224/978-1-63248-004-0-87 ISBN 978-1-62348-004-0
16. Cianci R., Sburlati R., Interphase zone effect on the spherically symmetric elastic response of a composite material reinforced by spherical inclusions. *International Journal of Solids and Structures* 71 (2015) 91–98, DOI 10.1016/j.ijsolstr.2015.06.010
17. Cianci, R., Bruzzone, A., Sburlati, R., A simulation of one dimensional contaminant transport, *Simulation Series*, Volume 48, Issue 9, Pages 471-475, 2016
18. Bruzzone G., Cianci, R., Longo, F., Agresta, M., Innovative simulation for scenario analysis and operational planning. *Simulation Series*, Volume 48, Issue 9, pp. 464-469 2016
19. Cianci .R, Sburlati R., Kashtalyan M., Effect of graded interphase on the coefficient of thermal expansion for composites with spherical inclusions, *Int. J. Solid Structure*, vol. 110-111, p. 80-88, ISSN: 0020-7683, doi: 10.1016/j.ijsolstr. 2017
20. Alessandri A., Bagnerini P., Cianci, Gaggero M., Optimal Control of Level Sets Generated by the Normal Flow Equation, submitted 2017
21. Sburlati, R., Cianci, R., Kashtalyan, M., Hashin's bounds for elastic properties of particle-reinforced composites with graded interphase, *International Journal of Solids and Structures*, 2018, p 224-235
22. Fahimeh Allahi, Sander de Leeuw, Ehsan Sabet, Ramez Kian, Lorenzo Damiani, Pietro Giribone, Roberto Revetria, Roberto Cianci (2018). A Review of System Dynamics Models Applied in Social and Humanitarian Researches. In: *Lecture Notes in Engineering and Computer Science: Proceedings of The World Congress on Engineering 2018.* p. 789-794, Newswood Limited, ISBN: 978-988-14048-9-3, Londra, 4/7/2018
23. Allahi F., Revetria R., Cianci R. (2018). Cash and Voucher Impact Factor in Humanitarian Aid: A System Dynamic Analysis. *Proceedings of the MAS 2018*, 17-19 September, Budapest, Hungary.
24. Moranda, A, Cianci R. Paladino O. Analytical Solutions of One-Dimensional Contaminant Transport in Soils with Source Production-Decay , *Soil Syst.* 2018, 2, 40; doi:10.3390/soilsystems2030040, 2018
25. Alessandri A., Bagnerini P., Cianci R., Gaggero M. (2019). Optimal propagating fronts using Hamilton-Jacobi equations. *MATHEMATICS*, vol. 7, p. 1122-1131, ISSN: 2227-7390, doi: 10.3390/math7111122
26. Alessandri, Angelo, Bagnerini, Patrizia, Cianci, Roberto, Gaggero, Mauro (2018). Optimal Control of Level Sets Generated by the Normal Flow Equation. In: A. Alessandri;P. Bagnerini;R. Cianci;M. Gaggero. *Theory, Numerics and Applications of Hyperbolic Problems I.* vol. 236, p. 29-42, Springer, ISBN: 978-3-319-91545-6, doi: 10.1007/978-3-319-91545-6\_3
27. Agostino G. Bruzzone, Roberto Cianci, Anna Sciomachen, Kirill Sinelshchikov, Matteo Agresta (2019). A digital twin approach to develop a new autonomous system able to operate in high temperature environments within industrial plants. In: *The 2019 Summer Simulation Conference (SummerSim'19).* SIMULATION SERIES, p. 1-12, ISSN: 0735-9276, Berlino 2019
28. Agostino G. Bruzzone, Marina Massei, Roberto Cianci, Alessandro de Gloria, Anna Sciomachen (2018). New Educational Programs Based On M&S For Strategic Engineering. In: *The International Workshop on Applied Modelling & Simulation WAMS 2018.* p. 42-49, ISBN: 9788885741225, Prague

29. Angelo Alessandri, Patrizia Bagnerini, Roberto Cianci, and Roberto Revetria "Modeling and Estimation of Thermal Flows Based on Transport and Balance Equations," *Advances in Mathematical Physics*, vol. 2020, Article ID 9621308, 10 pages, 2020. <https://doi.org/10.1155/2020/9621308>.
30. A Alessandri, P Bagnerini, R Cianci, S Donnarumma, A Taddeo, Stabilization of diffusive systems using backstepping and the circle criterion. DOI:10.1016/j.ijheatmasstransfer.2019.119132. pp.119132-119142. In *International Journal Of Heat And Mass Transfer* - ISSN:0017-9310 vol. 149, 2020
31. R Sburlati, R Cianci, Shear modulus prediction of a particulate composite reinforced with hollow spheres surrounded by a graded interphase, *Composite Structures*, 112528, 2020
32. Alessandri, Angelo, Bagnerini, Patrizia, Cianci, Roberto. State observation for Lipschitz nonlinear dynamical systems based on Lyapunov functions and functionals. DOI:10.3390/MATH8091424. pp.1424-1434. In *MATHEMATICS* - ISSN:2227-7390 vol. 8, (2020)
33. A Alessandri, P Bagnerini, R Cianci, R Revetria, Modeling and Estimation of Thermal Flows Based on Transport and Balance Equations, *Advances in Mathematical Physics* 2020
34. F Allahi, A Fateh, R Revetria, R Cianci, The COVID-19 epidemic and evaluating the corresponding responses to crisis management in refugees: a system dynamic approach, *Journal of Humanitarian Logistics and Supply Chain Management*, p. 131-141, ISSN: 2042-6747
35. F Allahi, S Taheri, R Kian, E Sabet, Cash-based interventions to enhance dignity in persistent humanitarian refugee crises: a system dynamics approach, *IEEE Transactions on Engineering Management*
36. Static and free vibration analysis of functionally graded annular plates using stress-driven nonlocal theory, Jafarinezhad, M., Sburlati, R., Cianci, R. *European Journal of Mechanics, A /Solids*, 2023, 99, 104955