

**EUROPASS
CURRICULUM VITAE**



PERSONAL INFORMATION

Name	COSTANZA ARICÒ
Work Address	Department of Engineering, Hydraulic Engineering Division, Viale delle Scienze, 90128, Palermo, Italy
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E-mail	costanza.arico@unipa.it
Nationality	Italian
Date of birth	+++++++

WORK EXPERIENCES

July 2020 – present, Department of Engineering, Hydraulic Engineering Division, Viale delle Scienze, 90128, Palermo, Italy	Associate Professor of Fluid Mechanics, Biofluid Mechanics and Hydraulics
November 2019 – present, Department of Engineering, Viale delle Scienze, 90128, Palermo, Italy	Member of the PhD Board in CHEMICAL, ENVIRONMENTAL, BIOMEDICAL, HYDRAULIC AND MATERIALS ENGINEERING
November 2013 – present, Department of Civil, Environmental and Material Engineering, Viale delle Scienze, 90128, Palermo, Italy	Member of the PhD Board in CIVIL, ENVIRONMENTAL AND MATERIALS ENGINEERING
December 2012 – July 2020, Department of Engineering, Hydraulic Engineering Division, Viale delle Scienze, 90128, Palermo, Italy	Tenure Track Researcher of Fluid Mechanics and Environmental Hydraulics
December 2010 – December 2012, Department of Civil, Environmental and Material Engineering, Hydraulic Engineering Division, Viale delle Scienze, 90128, Palermo, Italy	Postdoctoral Research Fellow
December 2009 – December 2010, National Research Council - Research Institute for Hydrogeological Defence, viale della Madonna Alta, 126, Perugia, Italy	Postdoctoral Research Fellow

June 2005 – June 2009, Department of Hydraulic Engineering and Environmental Applications, viale delle Scienze, 90128, Palermo, Italy

October 2002 – January 2003, Department of Civil Engineering, University of Sheffield Sir F. Mapping Street, Sheffield, UK

EDUCATION

November 2001 - November 2004, University of Catania, Italy

October 1992 - July 2000, University of Palermo, Italy

RESEARCH ACTIVITY

MAIN RESEARCH INTERESTS

- 2D/3D Numerical Methods for Flow and transport problems in saturated and unsaturated aquifers
- Multiphase flows in porous media
- Seawater intrusion and related energy recovery systems
- Numerical Methods for 2D/3D Navier-Stokes equations solver for incompressible fluids in real complex domains (industrial and biological applications),
- 3D computational hemodynamic in real domains,
- 2D/3D Numerical Methods for fluid and heat transport problems in natural, mixed and forced convection
- 2D/3D Numerical Methods for fluid and heat/solute double diffusion transport problems and related industrial applications (e.g., solar stills and solar ponds, with associated energy storage systems)
- 1D/2D Numerical Methods for shallow waters equations problems
- CFD analysis of hydrokinetic turbines

EDITORIAL ACIVITY

October 2021 - Present	Guest/Associate Editor of Journal of Fluids Engineering, American Society of Mechanical Engineering (ASME) ISSN 00982202, 1528901X, rank Q1 category 'Mechanical Engineering' (Scopus data, 2020)
October 2021 - Present	Associate Editor of Frontiers in Mechanical Engineering - Fluid Mechanics section, Indexed in Web of Science Emerging Sources Citation Index (ESCI), Scopus, Google Scholar, DOAJ, CrossRef, CLOCKSS
January 2021 - Present	Guest Editor of Special Issue "Hydraulic Dynamic Calculation and Simulation II" Water Journal ISSN 2073-4441, rank Q1, category 'Geography, Planning and Development' (Scopus data, 2020)
August 2019 - January 2021	Guest Editor of Special Issue "Hydraulic Dynamic Calculation and Simulation" Water Journal ISSN 2073-4441, rank Q1, category 'Geography, Planning and Development' (Scopus data, 2020)

Postdoctoral Research Fellow

PhD Visiting Research Fellow

PhD in Hydraulic Engineering Title of the thesis "Solid transport simulation in channel networks", Adviser Prof. Tullio Tucciarelli, University of Palermo

Master of Science in Civil Engineering - Hydraulics, final score 110/110 summa cum laude

REVIEWER ACIVITY

June 2008 - Present

Reviewer activity for International Scientific Journals :

Journal of Computational and Applied Mathematics, Hydrology and Earth System Sciences, Water Resources Research, Advances in Water Resources, Journal of Hydrology, Journal of Computational Physics, Flow Measurement and Instrumentation, Entropy, Environmental Earth Sciences, Journal of Mechanical Engineering Research, Water, Hydrological Processes, Journal of Hydro-Environment Research, Processes, Experimental Thermal and Fluid Science, PlosOne, Water Science and Technology, Fluids, Journal of Marine Science and Engineering, Sustainable Energy Technologies and Assessments

RESEARCH PROJECTS

Role: PARTECIPANT

Research Projects financed by University of Palermo :

- "Peak flow rate estimation in natural channels with heterogeneous roughness by means of unsteady flow simulations", Principal Investigator Prof. Tullio Tucciarelli, University of Palermo, 2007
- "Numerical simulations of heat and mass transport in groundwater aquifers", Principal Investigator Prof. Tullio Tucciarelli, University of Palermo, 2006
- "Two-dimensional marching in space and time shallow water models", Principal Investigator Prof. Tullio Tucciarelli, University of Palermo, 2005
- "Two-dimensional hydrodynamic flooding simulation over unstructured computational meshes", Principal Investigator Prof. Tullio Tucciarelli, University of Palermo, Italy, 2004

Research Projects of Significant National Interest (PRIN)

- "Hydroelectric energy from osmosis in coastal environment", Principal Investigator Prof. Tullio Tucciarelli, University of Palermo, 2011
- "Hydraulic flow rates and roughness monitoring in natural channels by means of hydrometric measurements integration". Principal Investigator Prof. Tullio Tucciarelli, University of Palermo, 2008
- "Peak flow rate measurements in natural channels", Principal Investigator Prof. Tullio Tucciarelli, University of Palermo, 2006

Regional Research Project

- "HYDROENERGY", 4.1.1.1. P.O. FESR 2007/2013, Principal Investigator Prof. Tullio Tucciarelli, University of Palermo
- "PERIMA Wind energy production with reduced environmental impact", 4.1.1.1. P.O. FESR 2007/13, Principal Investigator Prof. Giuseppe Campione, University of Palermo.

National Research Project

- SINERGREEN Smart Energy Master PON 2007-2013. Principal Investigator Prof. Goffredo La Loggia, University of Palermo.

Role PRINCIPAL INVESTIGATOR

Program "FIRB Future in Research 2013", Project Title : "Study of technological and environmental sustainability of geothermal reservoirs by means of an integrated modeling approach for forecasting hydraulic, thermal, geochemical and mechanical processes "Research Projects financed by University of Palermo

Role LOCAL INVESTIGATOR

Research Projects of Significant National Interest (PRIN) "Airflow and droplets transport differences at the olfactory cleft level studied by means of MRI-based computational fluid dynamics in COVID-19 patients with or without smell impairment", Principal Investigator Prof. Rosario Marchese Ragona, University of Padua, Italy, Investigator of the Research Unit of the University of Palermo Prof. Costanza Aricò. Submitted.

PUBLICATIONS

Papers in International Journals

1. Aricò, C., Sinagra, M., Driss, Z., Tucciarelli, T. (2021). A new solver for incompressible non-isothermal flows in natural and mixed convection over unstructured grids, *Applied Mathematical Modeling*, Accepted, DOI: 10.1016/j.apm.2021.10.042
2. Picone, C., Sinagra, M., Aricò, C., Tucciarelli, T. (2021) Numerical analysis of a new Cross-flow type hydraulic turbine for high head and low flow rate, *Engineering Applications of Computational Fluid Mechanics*, ISSN 19942060, Accepted
3. Mosbahi, M., Lajnef, M., Derbel, M., Mosbahi, B., Driss, Z., Aricò, C., Tucciarelli, T., (2021), Performance improvement of a Savonius water rotor with novel blade shapes, *Ocean Engineering*, vol. 237, <https://doi.org/10.1016/j.oceaneng.2021.109611> ISSN 0029-8018
4. Hannachi, M., Ketata, A., Sinagra, M., Aricò, C., Tucciarelli, T., Driss, Z. (2021). A novel pressure regulation system based on Banki hydro turbine for energy recovery under in-range and out-range discharge conditions. *Energy Conversion and Management*, 2021, vol. 243, doi:10.1016/j.enconman.2021.114417114417, ISSN 01968904
5. Mosbahi, M., Derbel, M., Lajnef, M., Mosbahi, B., Driss, Z., Aricò, C., Tucciarelli, T. (2021), Performance Study of Twisted Darrieus Hydrokinetic Turbine With Novel Blade Design, *ASME J. Energy Resour. Technol.* vol. 143(9), <https://doi.org/10.1115/1.4051483>, ISSN: 0195-0738
6. Ghaderi, A., Dasineh, M., Aristodemo, F., Aricò, C. (2021). Numerical simulations of the flow field of a submerged hydraulic jump over triangular macroroughnesses. *Water (Switzerland)*, 2021, vol. 13(5), 674 doi:10.3390/w13050674, ISSN 20734441
7. Sinagra, M., Picone, C., Aricò, C., Pantano A., Tucciarelli, T. Hannachi, M., Driss, Z. (2021). Impeller optimization in crossflow hydraulic turbines. *Water (Switzerland)*, 2021, vol. 13(3), doi:10.3390/w13030313, ISSN 20734441
8. Mosbahi, M., Lajnef, M., Derbel, M., Mosbahi B., Aricò C., Sinagra, M., Driss, Z. (2021). Performance improvement of a drag hydrokinetic turbine. *Water (Switzerland)*, 2021, vol. 13(3), doi:10.3390/w13030273, ISSN 20734441
9. Aricò, C., Sinagra, M., Picone, C., Tucciarelli, T. (2021). MAST-RT0 solution of the incompressible NavierStokes equations in 3D complex domains. *Engineering Applications of Computational Fluid Mechanics*, 2021, vol. 15(1), p. 5393, doi:10.1080/19942060.2020.1860830, ISSN 19942060
10. Sinagra M., Arico' C., Tucciarelli T., Morreale, G. (2020). Experimental and numerical analysis of a backpressure Banki inline turbine for pressure regulation and energy production *RENEWABLE ENERGY* vol 149 p 980 986 doi: 10.1016/j.renene.2019.10.076, ISSN: 0960-1481
11. Arico' C., Sinagra M., Nagy R., Napoli E., Tucciarelli T. (2020). Investigation of the hemodynamic flow conditions and blood-induced stresses inside an abdominal aortic aneurysm by means of a SPH numerical model. *INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN BIOMEDICAL ENGINEERING*, vol. 36, e3263, doi: 10.1002/cnm.3263, ISSN:2040-7947
12. Sinagra M., Arico' C., Tucciarelli T., Amato, P., Fiorino M. (2019). Coupled Electric and Hydraulic Control of a PRS Turbine in a Real Transport Water Network. *WATER*, vol. 11(6), p. 1-12, doi: 10.3390/w11061194, ISSN: 2073-4441
13. Arico' C. and Nasello C. (2018). Comparative analyses between the zero-inertia and fully dynamic models of the shallow water equations for unsteady overland flow propagation. *WATER*, vol. 10(1), p. 1-31, doi: 10.3390/w10010044, ISSN: 2073-4441
14. Arico' C. and Lo Re C. (2016). A non-hydrostatic pressure distribution solver for the nonlinear shallow water equations over irregular topography. *Advances in Water Resources*, vol.98, pages 4769, <http://dx.doi.org/10.1016/j.advwatres.2016.10.015> ISSN:0309-1708
15. Arico' C, Filianoti P, Sinagra M. and Tucciarelli T. (2016). The FLO Diffusive 1D-2D Model for Simulation of River Flooding, *Water* 2016, 8, 200; doi:10.3390/w8050200. ISSN: 2073-4441

16. Sinagra, M., Sammartano, V., Arico', C., & Collura, A. (2016). Experimental and Numerical Analysis of a Cross-Flow Turbine. *Journal of Hydraulic Engineering ASCE*, vol. 142(1). DOI: [http://dx.doi.org/10.1061/\(ASCE\)HY.1943-7900.0001061](http://dx.doi.org/10.1061/(ASCE)HY.1943-7900.0001061). ISSN: 0733-9429
17. Fecarotta, O., Arico', C., Carravetta, A., Martino, R., & Ramos, H. (2015). Hydropower Potential in Water Distribution Networks: Pressure Control by PATs. *Water Resources Management*, vol. 29(3):699-714. DOI:10.1007/s11269-014-0836-3. ISSN 0920-4741
18. Sinagra M., Sammartano V., Arico' C., Collura A., Tucciarelli T. (2014). Cross-Flow turbine design for variable operating conditions. *PROCEDIA ENGINEERING*, vol. 2014, p. 1539-1548. <http://dx.doi.org/10.1016/j.proeng.2014.02.170>. ISSN:1877-7058
19. Sammartano V, Arico' C, Sinagra M, Tucciarelli, T. (2015). Cross-Flow Turbine Design For Energy Production And Discharge Regulation. *Journal of Hydraulic Engineering ASCE*, vol. 141(3). doi: [http://dx.doi.org/10.1061/\(ASCE\)HY.1943-7900.0000977](http://dx.doi.org/10.1061/(ASCE)HY.1943-7900.0000977). ISSN: 0733-9429
20. Arico' C, Sinagra M. and Tucciarelli T (2013). Anisotropic potential of velocity fields in real fluids: Application to the MAST solution of shallow water equations . *Advances in Water Resources*, vol. 62, p. 13-36. doi:10.1016/j.advwatres.2013.09.010. ISSN: 0309-1708
21. Arico' C. and Tucciarelli T. (2013). Monotonic solution of heterogeneous anisotropic diffusion problems. *Journal of Computational Physics*, vol. 252, 219-249, doi:10.1016/j.jcp.2013.06.017. ISSN: 0021-9991
22. Sammartano V., Arico' C., Carravetta A., Fecarotta O. and Tucciarelli T. (2013). Banki-Michell optimal design by CFD testing and hydrodynamic analysis. *Energies*, vol. 6, 2362-2385. doi:10.3390/en6052362. ISSN: 1996-1073
23. Arico' C., Sinagra M. and Tucciarelli T. (2013). Monotonic solution of flow and transport problems in heterogeneous media using Delaunay unstructured triangular meshes. *Advances in Water Resources*, Vol. 52(4), 132-150, doi.org/10.1016/j.advwatres.2012.09.006. ISSN: 0309-1708
24. Arico' C., Sinagra M. and Tucciarelli T. (2012). The MAST edge centred lumped scheme for the flow simulation in variably saturated heterogeneous porous media. *Journal of Computational Physics*, Vol. 231(4), 1387-1425, doi:10.1016/j.jcp.2011.10.012. ISSN: 0021-9991
25. Arico' C., Sinagra M. Begnudelli L. and Tucciarelli T. (2011). MAST-2D diffusive model for flood prediction on domains with triangular Delaunay unstructured meshes. *Advances in Water Resources*, Vol. 34(11), 1427-1449, doi:10.1016/j.advwatres.2011.08.002. ISSN: 0309-1708
26. Arico' C., Corato G., Tucciarelli T., Meftah M. B., Petrillo A. F. and Mossa M. (2010). Discharge estimation in open channels by means of water level hydrograph analysis. *Journal of Hydraulic Research*, vol. 48(5), pp. 612-619. <http://dx.doi.org/10.1080/00221686.2010.507352>. ISSN: 0022-1686
27. Arico' C., Nasello C. and Tucciarelli T. (2009). Using unsteady-state water level data to estimate channel roughness and discharge hydrograph. *Advances in Water Resources*, Vol. 32(8), pp. 1223-1240, doi:10.1016/j.advwatres.2009.05.001. ISSN: 0309-1708
28. Arico' C. and Tucciarelli T. (2009). The MAST-FV/FE scheme for the simulation of two dimensional thermohaline processes in variable density saturated porous media. *Journal of Computational Physics*, Vol. 228(4), pp. 1234-1274, doi:10.1016/j.jcp.2008.10.015. ISSN: 0021-9991
29. Arico' C. and Tucciarelli T. (2009). Comparison of different 2nd order formulations for the solution of the 2D groundwater flow problem over irregular triangular meshes. *WSEAS Transactions on Fluid Mechanics*, Vol. 4(2), pp. 45-57. ISSN: 1790-5087
30. Arico' C. and Tucciarelli T. (2008). Diffusive Modeling of Aggradation and Degradation in Artificial Channels. *Journal of Hydraulic Engineering, ASCE*, vol. 134(8), pp. 1079-1088, doi:10.1061/(ASCE)0733-9429(2008)134:8(1079). ISSN: 0733-9429
31. Arico' C. Nasello C. and Tucciarelli T. (2007). A Marching in Space and Time (MAST) solver of the shallow water equations. Part II: The 2D model. *Advances in Water Resources*, Vol. 30(5), pp. 1253-1271, doi:10.1016/j.advwatres.2006.11.004. ISSN: 0309-1708

32. Arico' C. and Tucciarelli T. (2007). A Marching in Space and Time (MAST) solver of the shallow water equations. Part I: The 1D model. *Advances in Water Resources*, Vol. 30(5), pp.1236-1252 doi:10.1016/j.advwatres.2006.11.003. ISSN: 0309-1708
33. Arico' C. and Tucciarelli T. (2007). MAST solution of advection problems in irrotational flow fields. *Advances in Water Resources*, Vol. 30(3), pp. 665-685, doi:10.1016/j.advwatres.2006.03.007. ISSN: 0309-1708

Editorials

Aricò, C. Hydraulic dynamic calculation and simulation *Water (Switzerland)*, 2021, 13(9), 1234, doi:10.3390/w13091234, ISSN: 20734441

Papers in Books and Others

1. Aricò C. (2017). Simulation of the Propagation of Tsunamis in Coastal Regions by a Two-Dimensional Non-Hydrostatic Shallow Water Solver. *FLUID MECHANICS RESEARCH INTERNATIONAL JOURNAL*, doi:10.15406/FMRIJ.2017.01.00011
2. Aricò C. (2006). A Marching in space and time (MAST) solver of the shallow water equations. In: LUIGI FRACCAROLLO E LUIGI NATALE. *XXX Convegno di Idraulica e Costruzioni Idrauliche. Atti della Master Class: Modelli numerici di correnti fluviali su fondo fisso e fondo mobile.* (pp. 27-76). ISBN: 978-88-87242-81-2.ROMA: centro stampa università, Università La Sapienza, Roma, ITALY
3. Aricò C., Gaudio R. and Miglio A. (2004). Experimental validation of the DORA model for bed load transport in storm sewers. In: J-L BERTRAND-KRAJEWSKI, M ALMEIDA, J MATOS, S ABDUL-TALIB. *Sewer Networks and Processes within Urban Water Systems.* (pp. 66-75). ISBN: 1843395061. IWA (UNITED KINGDOM).

Papers in International Conferences Proceedings

1. Arico' C., Picone C., Sinagra M., Tucciarelli T. (2020), MAST-RT0 solution of 3D Navier Stokes equations in veryirregular domains. Preliminary results in the laminar case. 6th IAHR Europe Congress, Warsaw September 14-17.
2. Aricò C., Alotta, G., Zingales, M., Napoli, E., Monteleone, A., Nagy, R. (2018). Numerical Simulations of the Hydrodynamics of the Abdominal Aorta Aneurysm (AAA) Using a Smoothed Particle Hydrodynamics Code with Deformable Wall Preliminary Results. In: *IEEE 4th International Forum on Research and Technologies for Society and Industry, RTSI 2018 - Proceedings.* p. 1-4, Institute of Electrical and Electronics Engineers Inc., ISBN:978-1-5386-6282-3, Palermo, 2018, doi:10.1109/RTSI.2018.8548389.
3. Aricò C., Lo Re C. Monteforte M, Ferreri G. B., La Loggia G. (2015) A robust non-hydrostatic, depth-integrated, unstructured grids model for nearshore processes. 35th Int. Conf. on Coastal Engineering, Istanbul, Turkey, July 2016
4. Sinagra M, Sammartano V, Arico' C, Collura A, Tucciarelli T (2013). Cross-Flow turbine design for variable operating conditions. In: *Proc. 12th International Conference on Computing and Control for the Water Industry, CCWI2013.* Elsevier LDT.
5. Aricò C., Sinagra M. and Tucciarelli T. (2012). Efficient solution of heterogeneous anisotropic convection/diffusion transport problems. *Proc. XIX International Conference on Water Resources CMWR 2012*, University of Illinois at Urbana-Champaign, June 17-22, 2012. (Abstract and Oral Presentation)
6. Aricò C. and Tucciarelli T. (2012). Efficient solution of heterogeneous anisotropic diffusion problems. *Proc. XIX International Conference on Water Resources CMWR 2012*, University of Illinois at Urbana-Champaign, June 17-22, 2012.
7. Aricò C. and Tucciarelli T. (2011). Advanced modelling techniques for groundwater flow and transport. *Proceedings of Indo Italian Workshop on Advances in Fluvial Hydraulics and Water Resources Development and Management CWPRS*, Pune, India, 15-16 September 2011.
8. Aricò C., Moramarco T., Sinagra M., Tarpanelli A. and Tucciarelli T. (2010). Fast solution of diffusive shallow water equations for real time flood prediction. *Proc. 1st IAHR European Congress*, 4-6 May 2010 Edimburgh. ISBN: 9780956595102
9. Aricò C., Corato G., Meftah M. B., Mossa M., Petrillo A. F. and Tucciarelli T. (2010). Validation of indirect discharge estimation in open channels by means of lab experiments. *Proc. 1st IAHR European Congress*, 4-6 May 2010 Edimburgh. ISBN: 9780956595102

10. Aricò C., Nasello C., Sinagra M. and Tucciarelli T. (2009). An improved numerical solver of the 2D diffusive shallow waters equations over unstructured triangular meshes. Proc. 13th Workshop on Physical Processes in Natural Waters, Palermo, Italy, 1-4 September 2009. ISBN 978-88-903895-0-4.
11. Aricò C. and Tucciarelli T. (2008). Comparison between the MHFEM formulation and a 2nd spatial order FV formulation of the linear ground problem. Proc. 8th WSEAS International Conference on SIMULATION, MODELLING and OPTIMIZATION (SMO '08), September 23-25, 2008, Santander, Cantabria, Spain. ISBN: 978-960-474-007-9 ISSN: 1790-2769
12. Aricò C, Tucciarelli T., Dottori F., Martina M. and Todini E. (2008). Peak flow measurement in the Arno River by means of un steady-state water level data analysis. Proc. Int. Conf. River Flow 2008, September 2008. ÇesmeĐzmir/ TURKEY. ISBN 978-605-60136 2-1
13. Aricò C. and Tucciarelli T. (2008). The MAST-FV/FEM scheme for the simulation of thermohaline processes in density-variable saturated porous media. Proc. 19th International Symposium on Transport Phenomena, 17-20 August, 2008, Reykjavik, Iceland.
14. Aricò C, Nasello C., Noto M. T. and Tucciarelli T. (2007). Peak flow estimation by means of synchronous water level measurements. Geophysical Research Abstracts, Vol. 9, 02725, SRef-ID: 1607-7962/gra/EGU2007-A-02725, European Geosciences Union 2007.
15. Aricò C., Ciraolo G., Nasello C. and Tucciarelli T. (2007). Application of the MAST scheme for the shallow water simulation in the Marsala lagoon, Proceedings of 32nd Congress of IAHR Harmonizing the Demands of Art and Nature in Hydraulics su Cd-Rom. Venice, Italy, July 1-6, 2007. ISBN 88-89405-06-6.
16. Aricò C., Nasello C. and Tucciarelli T. (2006). A marching in space and time solver for the complete 2D shallow water equations. Application to real test cases. In: Volume 1. RIVER FLOW 2006. Lisbona, Portogallo. 6-8 settembre 2006. (vol. 1, pp. 429-438). ISBN/ISSN: 978-0-415-40815-6. LEIDEN: Taylor & Francis/Balkema (NETHERLANDS).
17. Aricò C. and Tucciarelli T. (2006). A Marching in Space and Time approach for the solution of shallow water equations. VIII Congresso SIMAI, Baia Samuele, Ragusa, Italy, 22-26 May 2006.
18. Aricò C. and T. Tucciarelli. (2005). The MAST model for the solution of advective problem in irrotational flow fields. Preliminary investigation of the non-oscillatory properties. International Conference on High Order Non-Oscillatory Methods for Wave Propagation: Algorithms and Applications, Trento, 4 7 April, 2005. (Abstract e oral presentation).
19. Aricò C. and Tucciarelli T. (2004). An explicit, eulerian and unconditionally stable methodology for the solution of the advective transport problem in irrotational flow fields. XV Congresso Italiano di Meccanica Computazionale GIMC2004, Genova, 21-23 June 2004.
20. Aricò C., Gaudio R. and Miglio A. (2003). Experimental validation of the DORA model for bed load transport in storm sewers. Proc. 18th European Junior Scientist Workshop on Sewer Processes and Networks, Almogrove, Portogallo, November 2003.
21. Aricò C., Calomino F. and Miglio A (2003). The DORA model for bed-load transport in storm sewers. NATO ARW Conference Enhancing Urban Environment: Environmental Upgrading of Municipal Pollution Control Facilities and Restoration of Urban Waters - Roma, 5 8 November 2003. (Poster)
22. Aricò C. and Tucciarelli T. (2003). DORA model for flow and sediment transport simulation in sewer networks. Comparison with analytical solutions and experimental data. Proc. TCN-CAE 2003 Int. Conf. on CAE and Computational Technologies for Industry, Ottobre 2003.
23. Aricò C. and Tucciarelli T. (2002) A partially coupled flow and transport model for sewer networks. Proc. Int. Conf. Sewer Operation and Maintenance, Bradford UK, November 2002.

1. Aricò C., Sinagra M., Picone C. and Tucciarelli T. (2021). MAST-RT0 SOLUTION OF 3D NAVIER STOKES EQUATIONS ON UNSTRUCTURED MESHES. PRELIMINARY RESULTS IN THE LAMINAR CASE. XXXVII Convegno Nazionale di Idraulica e Costruzioni Idrauliche, Reggio Calabria, Giugno 2021.
2. Maltese A.D., Costa F., Aricò C. (2016). A 2D NONHYDROSTATIC FINITE VOLUME SHALLOW WATERS SOLVER OVER UNSTRUCTURED GRIDS FOR LONG WAVES/Tsunami SIMULATIONS. Atti del XXXV Convegno nazionale di Idraulica e Costruzioni Idrauliche, Bologna, 14-16 settembre 2016
3. Aricò C., Lo Re C., Monteforte M., Ferreri G. B., La Loggia G. (2015). Un modello non idrostatico, integrato sulla verticale, per i processi idrodinamici costieri. Validazione con nuovi esperimenti di laboratorio. Risultati preliminari. Studi di Aggiornamento AIOM Tecniche e tecnologie nelle costruzioni marittime e offshore Genova, 16-17 Ottobre 2015
4. Aricò C., Tucciarelli T., Modellazione 3D di problemi diffusivi in mezzi anisotropi ed eterogenei. Atti del XXXIV Convegno nazionale di Idraulica e Costruzioni Idrauliche, Bari, 8-10 settembre 2014
5. Fecarotta O., Sammartano V., Aricò C., Carravetta A., Collura A., Sinagra M. e Tucciarelli T. (2012). Esperienze fluidodinamiche su una turbina di piccola potenza tipo Banki-Michell. Atti del XXXIII Convegno di Idraulica e Costruzioni Idrauliche, Brescia, Italia, 10-15 Settembre 2012, ISBN/ISSN: 978-88-97181-18-7.
6. Aricò C., Sinagra M. e Tucciarelli T. (2012). Unefficiente metodologia per la soluzione di problemi di trasporto anisotropi eterogenei. Atti del XXXIII Convegno di Idraulica e Costruzioni Idrauliche, Brescia, Italia, 10-15 Settembre 2012, ISBN/ISSN: 978-88-97181-18-7.
7. Aricò C. e Tucciarelli T. (2012). Unefficiente metodologia per la soluzione di problemi diffusivi anisotropi eterogenei. Atti del XXXIII Convegno di Idraulica e Costruzioni Idrauliche, Brescia, Italia, 10-15 Settembre 2012, ISBN/ISSN: 978-88-97181-18-7.
8. Aricò C., Sinagra M., Tarpanelli A., Moramarco T. e Tucciarelli T. (2010). Utilizzo di un modello diffusivo 2D di acque basse per la simulazione in tempo reale di scenari di inondazione. Atti del XXXII Convegno di Idraulica e Costruzioni Idrauliche, Palermo, Italia, 14-17 Settembre 2010, ISBN/ISSN: 978-88-903895-2-8.
9. Aricò C., Nasello C., Sinagra M. e Tucciarelli T. (2010). Inserimento di restringimenti e ponti in un modello diffusivo di acque basse. Atti del XXXII Convegno di Idraulica e Costruzioni Idrauliche, Palermo, Italia, 14-17 Settembre 11 2010, ISBN/ISSN: 978-88-903895-2-8
10. Aricò C., Camici S., Moramarco T., Sinagra M., Tucciarelli T., Rizzo E., Giampaolo V. e Morbidelli R. (2010). Analisi del moto di filtrazione in rilevati arginali mediante tomografia di resistività elettrica. Atti del XXXII Convegno di Idraulica e Costruzioni Idrauliche, Palermo, Italia, 14-17 Settembre 2010, ISBN/ISSN: 978-88-903895-2-8.
11. Aricò C., Moramarco T., Morbidelli R., Rizzo E., Sinagra M. e Tucciarelli T. (2010) Il metodo MAST/LMHFE per la simulazione di mezzi porosi parzialmente saturi. Applicazione ad un'arginatura sperimentale. Atti del XXXII Convegno di Idraulica e Costruzioni Idrauliche, Palermo, Italia, 14-17 Settembre 2010, ISBN/ISSN: 978-88-903895-2-8.
12. Aricò C., Nasello C. e Tucciarelli T. (2008). Misure di portata al colmo mediante analisi di livelli idrici in condizioni di moto vario. Atti del XXXI Convegno di Idraulica e Costruzioni Idrauliche, Perugia, Italia, 9-12 Settembre 2008. ISBN/ISSN: 978-88-6074-220-9.
13. Aricò C. e Tucciarelli T. (2008). Il metodo MAST FV/FEM per la soluzione di problemi di trasporto in mezzi porosi saturi a densità variabile mediante utilizzo di stream function. Atti del XXXI Convegno di Idraulica e Costruzioni Idrauliche, Perugia, Italia, 9-12 Settembre 2008. ISBN/ISSN: 978-88-6074-220-9.
14. Aricò C. e Tucciarelli T. (2006). Un risolutore ad avanzamento spaziale e temporale delle equazioni complete di acque basse. XXX CONVEGNO NAZIONALE DI IDRAULICA E COSTRUZIONI IDRAULICHE. Roma, Italia, 10-15 Settembre 2006. (pp. 1-15). ISBN/ISSN: 978-88-87242-81-2.
15. Calomino, F., De Bartolo S., Gaudio R., Miglio A. e Aricò C. (2004). Valutazione dell'indice di resistenza in alvei stretti in presenza di trasporto solido di fondo. XXIX Convegno Nazionale di Idraulica e Costruzioni Idrauliche. Trento, Italia, Settembre 2004. (pp. 389-396). ISBN/ISSN: 88-7740-382-9.

HONOURS, AWARDS, PATENTS

16. Aricò C., Miglio A. e Tucciarelli T. (2004). Simulazioni di correnti in moto vario su alveo a fondo mobile mediante l'utilizzo di un modello diffusivo e formule di trasporto solido fisicamente basate. XXIX Convegno Nazionale di Idraulica e Costruzioni Idrauliche. Trento, Italia, Settembre 2004. (vol. 1, pp. 757-764). ISBN/ISSN: 88-7740-382-9.

- 2020. EWaS4 Best Paper Award 2nd Place - Silver Prize Title "Design of reliable and efficient banki typeturbines" Authors Sinagra M, Picone C, Tucciarelli, T, Aricò C, Hannachi M
- 2017. Winner of Funding Fund for Basic Activities • of Research (FFABR)
- 2015. Patent for industrial invention Title: HIGH STABILITY STRUCTURE FLOAT. 13/12/2017. Authors CIRALLI E., FERRERI G. B., FRICANO G., LITRICO G., MONTEFORTE M., DAMIANO C., ARICÒ C., PULEO V., Lo Re C
- 2008. Best paper award 8th WSEAS International Conference on SIMULATION, MODELLING AND OPTIMIZATION (SMO '08), Santander, Cantabria, Spain, September 23-25, 2008. Title "Comparison between the MHFEM Formulation and a 2nd Spatial Order FV Formulation of the Linear Groundwater Flow Problem", pp.70-77, Authors Costanza Arico and Tullio Tucciarelli

COURSES AND TEACHING ACTIVITIES

Attended Courses

- "Introduction to Parallel Computing with MPI and OpenMP", Organizer Cineca (online event, March 2021)
- "From C to C++ object programming", Organizer CINECA, Casalecchio di Reno (BO), 19-21 November 2008
- "Introduction to C language for scientific programming", Organizer CINECA, Casalecchio di Reno, (BO), 17-18 November 2008
- "Advanced numerical modeling of flow and transport in soils and aquifers (ANMFT)", Organizer Centro di GeoTecnologie University of Siena, Certosa di Pontignano, Siena, 7-18 April 2008
- "Finite Element Methods. Fundamentals and advanced applications in Engineering", Organizer MOX, Modellistica e calcolo scientifico, Dipartimento di Matematica, Politecnico di Milano, 27-31 March 2006
- "Grids generation techniques for scientific computing", Organizer MOX, Modellistica e calcolo scientifico, Dipartimento di Matematica, Politecnico di Milano, 21-24 November 2005
- "Numerical methods for hyperbolic equations and applications", Organizer University of Trento, Prof. E. F. Toro, 7-18 June 2004
- "Introduction to Computational Fluid Dynamics," Organizer Von Karman Institute, Belgium, 12-16 January 2004
- Doctoral course on "Numerical methods for partial differential Equations", Organizer University of Catania, Prof. G. Russo, October 2003
- Doctoral courses, Organizers Universities of Catania, "della Calabria, Cosenza" and Palermo (June- September 2002)

Given PhD Courses and Seminars

- "Eulerian numerical methods for computational fluid dynamics", PhD course, Organizer University of Palermo, 7-10 June 2021
- "A recent numerical Finite Volume methodology over unstructured grids for hydrodynamics coastal inundation" Organizer Dipartimento di Ingegneria Civile, Edile e Architettura, Facoltà di Ingegneria, Università Politecnica delle Marche 16 December 2015
- "Numerical Modelling of coastal inundations", PHD MeDIA PROGRAM Gii, Organizer University of Palermo, 15-18, September 2015
- "Recent numerical techniques for the solution of flow and transport groundwater problems". Organizer Dipartimento di Ingegneria Civile, Edile e Ambientale (DICEA), Università di Padova, 17 January 2013

Organized PhD Courses

- "Modeling and monitoring of water bodies" MeDIA PROGRAM Gii, Organizer University of Palermo 15-18, September 2015
- "The sediment transport in some of its physical and modelling aspects", by Prof. L. Fraccarollo (University of Trento), Organizer University of Palermo, December 2007
- "Fundamentals of the Finite Element Method and engineering applications" by Prof. G. Gambolati (University of Padua), Organizer University of Palermo, November 2006
- "Numerical methods for the shallow waters equations", by Prof. E. F. Toro (University of Trento), Organizer University of Palermo, October 2005

Advisor activity of PhD and MS Students

- 2019-2022. PhD Student Dr. Calogero Picone, research topic "Efficient turbomachineries in hydraulic plants with high flows variations". Innovative Industrial Doctorate. Co-advisor with Prof. T. Tucciarelli. University of Palermo
- 2009-2012 PhD Student dr. Marco Sinagra, research topic "2D hydraulic simulation for real-time delimitation of flooding risk areas". Co-advisor with Prof. T. Tucciarelli. University of Palermo
- 2008-2012. PhD Student Dr. Giovanni Corato, research topic "Discharge estimation in natural channels with limited velocity data". Co-advisor with Prof. T. Tucciarelli. University of Palermo
- From 2013 Costanza Aricò has been advisor of several MS Students in Mechanical Engineering at the University of Palermo

Given Academic Courses

- 2020-present. "Fluid Mechanics" for Mechanical Engineering, University of Palermo
- 2021-present "Biofluid Mechanics" for Biomedical Engineering, University of Palermo
- 2019-2021 "Hydraulics" for Environmental Engineering, University of Palermo
- 2015-2018 "Applied Fluid dynamics" for Mechanical Engineering, University of Palermo
- 2019-2021 "Fluid Mechanics" 3 credits course (27 hrs) for Mechanical Engineering, University of Palermo
- 2003-2018 Attendant for the courses of "Hydraulics" (Civil Engineering), "Fluid Mechanics" (Mechanical Engineering) "Hydrodynamics" (Civil Engineering) University of Palermo

SKILLS

- Computer programming language: Fortran 77, 90, 95, 2003, 2018 (advanced), C, C++ (elementary)
- Softwares : Paraview (advanced), Netgen (advanced), Tetgen (intermediate), Matlab (intermediate)
- MPI and OpenMP parallel computing (intermediate)

LANGUAGES

- Italian (native)
- English (advanced)
- French (elementary)

Sincerely,
15/11/2021