

Curriculum Vitae



Personal information

First name / Surname **Francesco MAICU**
E-mail francesco.maicu@cmcc.it
Nationality Italian
Date of birth 07-27-1975

Occupational field **AIR -SEA INTERACTION MODELLING**
HYDRODYNAMIC MODELLING OF LAGOONS AND COASTAL AREAS
OCEANOGRAPHY

Work experience

Dates November 2019 – 31/01/2023
Occupation or position held PhD Frontiers: “Future of the Earth, Climate Changes and Societal Challenges”
PhD Thesis: A coupled ocean atmosphere model for short term forecasting in the Mediterranean Sea
Name and type of organisation providing education and training **Alma Mater Studiorum University of Bologna Department of Physics and Astronomy** – founded by CMCC Euro-Mediterranean Center on Climate Change, dott. Silvio Gualdi and Prof. Nadia Pinardi

Dates April 2013 – October 2019
Occupation or position held Research Fellow
Main activities and responsibilities Hydrodynamic of coastal lagoons in the Po river delta, Venice Lagoon, Goro Lagoon (Northern Italy) and Nador Lagoon (Morocco)
Field survey activities (CTD probes and lagrangian drifters)
Oceanographic surveys (MREA14, MREA16, MREA17) jointly with Italian Navy
Name and address of employer **CNR- ISMAR - Institute of Marine Sciences, National Researches Council**, Venice Italy
Ref.: Dr. Ph.D Georg Umgiesser

Dates November 2003 - July 2013
Occupation or position held Consultant
Main activities and responsibilities Modelling engineer, water quality assessment with numerical modelling (FEM and FDM)
Meteo-marine data analysis and correlation with water quality parameters
GIS data integration of mathematical models results
Air quality modelling of Venice Lagoon area for the assessment of aerial contribution to water pollution by particulate deposition
Name and address of employer **Consorzio Venezia Nuova - for Servizio Informativo, Venice Water Authority**
Ref.: Eng. Roberto Rosselli, Prof. Ph.D. Albert Zirino (Scripps Institution of Oceanography, UCSD, San Diego, CA)

Dates June 2010 to February 2011
Occupation or position held Consultant
Main activities and responsibilities Meteo-ocean data analysis and correlation with ocean circulation models, from Al Jurf drilling platform (Mabruk Oil Operation, Lybian Sea)
Name and address of employer **EM.ES s.r.l.** Ref. : Eng. Flavio Cecchi

Dates June 2007 – July 2008
Occupation or position held Consultant

Main activities and responsibilities	River flow modelling for flood risk assessment in urban areas and definition of inundation areas for the Regione Autonoma della Sardegna)
Name and address of employer	ART Ambiente , Parma, Italy
<u>Dates</u>	<u>June 2002 – September 2003</u>
Occupation or position held	Employee
Main activities and responsibilities	River flow data analysis for Parma River basin hydrological balance project Real time rainfall-runoff monitoring for Parma River flood risk prevention Civil protection support activities during 2003 drought in Appennino mountains
Name and address of employer	Servizio Ambiente, Amministrazione Provinciale di Parma , Parma, Italy
<u>Dates</u>	<u>July 2002 – November 2003</u>
Occupation or position held	Independent worker
Main activities and responsibilities	Parma river flow modelling for the flood risk assessment in urban area General hydraulic evaluation of the project for Parma river flood by-pass
Name and address of employer	DICATEA University of Parma , Parco Area delle Scienze 43100 Parma, Italy (ref. Prof. Massimo Ferraresi)

Education and training

<u>Dates</u>	<u>November 2019 – 31/01/2023</u>
	PhD Frontiers: “Future of the Earth, Climate Changes and Societal Challenges” PhD Thesis: A coupled ocean atmosphere model for short term forecasting in the Mediterranean Sea
Name and type of organisation providing education and training	Alma Mater Studiorum University of Bologna Department of Physics and Astronomy – founded by CMCC Euro-Mediterranean Center on Climate Change, dott. Silvio Gualdi and Prof. Nadia Pinardi
<u>Dates</u>	<u>July-September 2022</u>
	Visiting PhD student at National Center for Atmospheric Research
Principal subjects/occupational skills covered	Development of a coupled ocean-atmosphere model on the Mediterranean region
Name and type of organisation providing education and training	NCAR National Center for Atmospheric Research, Boulder (CO), USA
<u>Dates</u>	<u>February 2019 and May 2018</u>
	Visiting researcher at SCRIPPS institution of Oceanography, San Diego (CA) USA
Principal subjects/occupational skills covered	Application of SHYFEM model to Aqua Hedionda Lagoon
Name and type of organisation providing education and training	UCSD University of California San Diego MESOM Lab. SCRIPPS, ref. Dott. Albert Zirino
<u>Dates</u>	<u>October 2017 - March 2018</u>
	Master course on Climate Changes and Adapting Strategies
Principal subjects/occupational skills covered	Climate Changes, IPCC scenarios, impacts, vulnerability and mitigation strategies formulations
Name and type of organisation providing education and training	EU.WATERCENTER UNIVERSITY of PARMA
<u>Dates</u>	<u>June 2010</u>
	Data Assimilation Advanced School
Principal subjects/occupational skills covered	Data Assimilation theory and applications for met-ocean data analysis and met-ocean forecasting models (ref. Prof Nadia Pinardi)
Name and type of organisation providing education and training	CMCC - EuroMediterranean Center for Climate Changes GNOO - National Group for Operational Oceanography
<u>Dates</u>	<u>October 1994 – April 2002</u>
	Civil Engineer degree (Dr. Engineer) final score 101/110
Principal subjects/occupational skills covered	Geotechnical analysis, River flow hydraulics, mathematical modelling Thesis title: “Hydraulic security analysis in Parma and Baganza rivers” Prof. Massimo Ferraresi

Name and type of organisation providing education and training
Level in national or international classification

Università degli Studi di Parma , Facoltà di Ingegneria – **University of Parma, Engineering Faculty**

ISCED 6

Publications
(author)

- Modelling the water dynamics of a tidal lagoon: The impact of human intervention in the Nador Lagoon (Morocco). *Continental Shelf Research* (2021). <https://doi.org/10.1016/j.csr.2021.104535>
- Downscaling with an unstructured coastal-ocean model to the Goro lagoon and the Po river delta branches. *Frontiers in Marine Science* (2021) <https://doi.org/10.3389/fmars.2021.647781>.
- Hydrodynamics of the Po River-Delta-Sea system", 2018 *Journal of Geophysical Research*, <https://doi.org/10.1029/2017JC013601>

Publications
(coauthor)

- Developing an Observing Air–Sea Interactions Strategy (OASIS) for the global ocean. *Journal of Marine Science*, September 2022. <https://doi.org/10.1093/icesjms/fsac149>
- Effects of Groundwater Inputs to the Hydraulic Circulation, Water Residence Time, and Salinity in a Moroccan Atlantic Lagoon. *Journal of Marine Science and Engineering*. January 2022, <https://doi.org/10.3390/jmse10010069>
- Saltwater intrusion in a Mediterranean delta under a changing climate. *Journal Article*, Jan. 2021. *Journal of Geophysical Research, Oceans*. DOI: 10.1029/2020JC016437
- Observational evidence of the Basin-wide gyre reversal in the Gulf of Taranto. *Journal Article*, Nov. 2020, *Geophysical Research Letter*. DOI: 10.1029/2020GL091030
- Coastal mixing in multiple-mouth deltas: A case study in the Po delta, Italy *Estuarine, Coastal and Shelf Science* 2019-10 | journal-article DOI: 10.1016/j.ecss.2019.106254
- Cross-scale operational oceanography in the Adriatic Sea. *Journal Article* Feb. 2019 *Journal of Operational Oceanography*
- Gene expression and genotoxicity in Manila clam (*Ruditapes philippinarum*) modulated by sediment contamination and lagoon dynamics in the Po river delta", 2018 *Marine Environmental Research* <https://doi.org/10.1016/j.marenvres.2018.10.010>
- The effect of lagoons on Adriatic Sea tidal dynamics", 2017. *Ocean Modelling* DOI: 10.1016/j.ocemod.2017.09.009
- High resolution multibeam and hydrodynamic datasets of tidal channels and inlets of the Venice Lagoon", 2017. *Scientific Data* DOI:10.1038/sdata.2017.121
- A coupled wave–3D hydrodynamics model of the Taranto Sea (Italy): a multiple–nesting approach" *nness-2016-95*
- Mapping turbidity patterns in the Po river prodelta using multi-temporal Landsat 8 imagery" 2016 DOI: 10.1016/j.ecss.2016.11.003
- Marine rapide environmental assessment in the Gulf of Taranto: a multiscale approach" *NHESS* 16(12) DOI: 10.5194/nhess-16-2623-2016
- Optimal design of a Lagrangian observing system for hydrodynamic surveys" *Proceedings of the Institute of Marine Engineering, Science, and Technology. Journal of operational oceanography* 9(sup1):s77-s88 · February 2016
- High-resolution satellite turbidity and sea surface temperature observations of river plume interactions during a significant flood event" 2015, *Ocean Science*
- Nitrogen to Phosphorous ratio in the Venice Lagoon (Italy) (2001-2010) and its relation to macroalgae" 2015, *Marine Chemistry*
- Salinity and its variability in the Lagoon of Venice, 2000-2009" *Advances in Oceanography and Limnology* Vol. 5, Iss. 1, 2014
- Comments on and implications of a steady-state in coastal marine ecosystems" *CHEMISTRY AND ECOLOGY*, iFirst, 2012, 1–14
- Dentro le alluvioni" *Pitagora Editrice*, autori vari (a cura della Provincia di Parma - Ass.to Ambiente e Tutela del Territorio)