

CURRICULUM VITAE



Latest update December 30, 2023

PERSONAL INFORMATION

First name and Surname

Giorgia Verri

Nationality

Italian

Birth date

15 March 1983 Galatina (LE)

Office

CMCC Foundation - Euro-Mediterranean Center on Climate Change
GOCO- Global Coastal Ocean Division
Via Marco Biagi, 5, Lecce - IT

E-mail

giorgia.verri@cmcc.it

CURRENT POSITION

• *Dates (from– to)*

2 May 2012 – Present

• *Company*

C.M.C.C. (Euro-Mediterranean Center on Climate Change)

• *Division*

GOCO (GIObal Coastal Ocean)

• *Job Title/ Contract*

Junior Scientist- Permanent contract

Research Activities and Responsibilities

Develop, maintain and upgrade a hybrid (physics and ML based) Estuarine Box Model, to properly represent the net river release into mesoscale ocean models and to get estimate of the salt wedge intrusion (<https://www.estuaryboxmodel.org/>)

Improve the numerical and physical capabilities of an unstructured-grid finite-element model based on SHYFEM code. Specific focuses: develop and evaluate vertical discretization of the water column through time dependent generalised vertical coordinate system; develop and evaluate freshwater boundary conditions

Model the regional-to-coastal scale water cycle by means of structured and unstructured grid approaches and an integrated multi-model system in order to reproduce the complex morphology and thermo-hydrodynamics of the land-sea interfaces while resolving large-scale processes

Coupling/seamless modeling of inland and marine waters working with finite difference/finite elements numerical codes

PREVIOUS WORK EXPERIENCES

• *Dates (from– to)*

11 October 2011 – 30 April 2012

• *Company*

GSE S.p.A.

• *Division*

Direzione Gestione Energia. Unità Previsioni e Ottimizzazioni

• *Contract*

Permanent contract

• *Main Activities and Responsibilities*

Implementation, development and validation of an **Operational System for wind energy and solar energy prediction**

Support to Technical Committee CT88 di IEC

Wind farm Surveys

• *Dates (from– to)*

2 April 2011-10 October 2011

• *Company*

GSE S.p.A

• *Division*

Direzione Gestione Energia. Unità Previsioni e Ottimizzazioni

- *Contract* Stage
- *Main Activities and Responsibilities* Implementation, development and validation of an **integrated modeling system for wind energy forecasting**
- *Dates (from– to)* 1 September 2010- 31 March 2011
- *Company* **ENEL** –Brindisi
- *Division* Enel Research Unit –Engineering and Innovation Division
- *Contract* Stage
- *Main Activities and Responsibilities* Research activities in meteorological modeling and development of integrated modeling system for **wind energy forecasting** and **pollutant dispersion**
Integrated modeling chain applied to EnelGreenPower wind farm: mesoscale meteorological prognostic model MM5 + microscale diagnostic WindSim

ABROAD PROFESSIONAL EXPERIENCES

- *Dates (from– to)* 1 September 2014- 1 March 2015
- *Main Activities and Responsibilities* Implementation and upgrade of a modeling chain for the coastal water cycle including atmosphere (WRF), hydrology (WRF-Hydro), estuarine dynamics (CMCC EBM) and marine thermo-hydrodynamics (NEMO)
- *Company* National Centre for Atmospheric Research, Boulder Colorado

TEACHING AND THESIS SUPERVISION

LECTURER IN THE PH.D. PROGRAMME FUTURE EARTH, CLIMATE CHANGE AND SOCIETAL CHALLENGES AT THE UNIVERSITY OF BOLOGNA:
 ○ *NUMERICAL MODELING SPECIALISED COURSE (2019-2020), (2020-2021), (2021-2022), (2022-2023), (2023-2024)*

CO-TUTOR OF PH.D. THESES:

NAME	YEAR	PH.D. THESIS TITLE
IVANO BARLETTA	2020	UNSTRUCTURED-GRID SEAMLESS MODELING FOR THE SOUTHERN EUROPEAN SEAS

TUTOR OF PH.D. THESES:

NAME	YEAR	PH.D. THESIS TITLE
RENATA TATSCH EIDT	2023	A DOWNSCALING EXERCISE FOR THE COASTAL OCEAN WITH THE PERFECT MODEL APPROACH

TUTOR OF PH.D. THESES:

NAME	YEAR	PH.D. THESIS TITLE
CATERINA GAINOLLA	2024	THE DANUBE RIVER ROLE IN THE BLACK SEA DYNAMICS

SELECTED RESEARCH PROJECTS AND RESPONSABILITIES

Member of the **Steering Team of FLAME** - core Project within the the CoastPredict Programme
<https://projects.noc.ac.uk/flame/>

Member of the **DCC-CR Commette** - Decade Collaborative Centre for Coastal Resilience
<https://centri.unibo.it/dcc-cr/en>

01/2024-12/206

Italy- Croatia Interreg **AdriaClimPLUS**- Climate change information, monitoring and management tools for adaptation strategies in Adriatic coastal areas

Coordinator

01/2024-12/206

HORIZON 2023 **FOCCUS**- Forecasting and observing the open-to-coastal ocean for Copernicus users
WP Leader for CMCC

07/2022-07/2024

Copernicus Marine Service Evolution **EstuarIO**- Estuarine box model for Interfacing rivers and Ocean
Coordinator

01/2020– 12/2022

Italy- Croatia Interreg **AdriaClim**- Climate change information, monitoring and management tools for
adaptation strategies in Adriatic coastal areas
Scientific Leader and WP Leader for CMCC

07/2018 – 12/2022

HORIZON 2020 **OPERANDUM**- OPEn-air laboRAtoRies for Nature baseD solUtions to environmental
risks
Scientific Leader for CMCC

07/2018 – 12/2019

Innonetwork **SAGAcE** - Sistema Avanzato di monitoraGgio Ambientale

09/2017

Organizing committee of the **Coastal Hydrology and Surface Processes linked to Air/Sea
Modeling: 1st community of users workshop**

05/2012 – 05/2015

P.O.N. **TESSA** - Development of technologies for the "Situational Sea Awareness"

05/2012 – 01/2015

Greece-Italy Interreg **IONIO** - IONian Integrated marine Observatory

PEER REVIEWED PAPERS

- **Verri, G.**, De Lorenzis, A., Da Costa, V., Sorolla, A., Löhner, A., Ribot, M., et al. (2024). Salt-wedge estuary's response to rising sea level, reduced discharge and Nature Based Solutions. *Frontiers Climate Under Review*
- Maglietta, R., **Verri, G.**, Saccotelli, L., De Lorenzis, A., Cherubini, C. Caccioppoli, R., Dimauro, G., Pinardi, N., Coppini, G. (2024) Advancing Estuarine Box Modeling: a Novel Hybrid Machine Learning and Physics-Based Approach. *Environmental Modelling and Software Under review*
- **Verri, G.**, L. Furnari, M. Gunduz, A. Senatore, V. Santos da Costa, A. De Lorenzis, G. Fedele, I. Manco, L. Mentaschi, E. Clementi, G. Coppini, P. Mercogliano, G. Mendicino, N. Pinardi, (2024). Climate projections of the Adriatic Sea: the role of river release, *Frontiers Climate Under Review*
- Mentaschi, L., Lovato, T., Butenschon, M., Alessandri, J., Aragão, L., **Verri, G.**, et al. (2024). Projected oligotrophication of the Adriatic marine ecosystems. *Frontiers Climate*
- **Verri, G.**, Barletta, I., Pinardi, N., Federico, I., Alessandri, J., & Coppini, G. (2023). Shelf slope, estuarine dynamics and river plumes in a z* vertical coordinate, unstructured grid model. *Ocean Modelling*
- Micalotto, G., Barletta, I., Mocavero, S., Federico, I., Epicoco, I., **Verri, G.**, ... & Pinardi, N. (2022). Parallel Implementation of the SHYFEM Model. *Geoscientific Model Development Discussions*, 1-33.
- Gallotti, G., Santo, M. A., Apostolidou, I., Alessandri, J., Armigliato, A., Basu, B., ... **Verri, G.**, ... & Di Sabatino, S. (2021). On the Management of Nature-Based Solutions in Open-Air Laboratories: New Insights and Future Perspectives. *Resources*, 10(4), 36.
- Maicu, F., Alessandri, J., Pinardi, N., **Verri, G.**, Umgieser, G., Lovo, S., ... & Valentini, A. (2021). Downscaling With an Unstructured Coastal-Ocean Model to the Goro Lagoon and the Po River Delta Branches. *Frontiers in Marine Science*.
- **Verri, G.**, Mahmoudi Kurdistani, S., Coppini, G., & Valentini, A. (2021). Recent Advances of a Box Model to Represent the Estuarine Dynamics: Time-Variable Estuary Length and Eddy Diffusivity. *Journal of Advances in Modeling Earth Systems*, 13(4), e2020MS002276.
- **Verri, G.**, Pinardi, N., Bryan, F., Tseng, Y. H., Coppini, G., & Clementi, E. (2020). A box model to represent estuarine dynamics in mesoscale resolution ocean models. *Ocean Modelling*, 148, 101587.

- Tintoré, J., Pinardi, N., Alvarez Fanjul, E., Balbin, R., Bozzano, R., Ferrarin, C., ..., **Verri, G.**,... & Clementi, E. (2019). Challenges for sustained observing and forecasting systems in the Mediterranean Sea. *Frontiers in Marine Science*, 6, 568
- **Verri, G.**, Pinardi, N., Oddo, P., Ciliberti, S. A., & Coppini, G. (2018). River runoff influences on the Central Mediterranean overturning circulation. *Climate dynamics*, 50(5-6), 1675-1703
- **Verri, G.**, Pinardi, N., Gochis, D., Tribbia, J., Navarra, A., Coppini, G., & Vukicevic, T. (2017). A meteo-hydrological modelling system for the reconstruction of river runoff: the case of the Ofanto river catchment. *Natural Hazards and Earth System Sciences*, 17(10), 1741.
- Coppini, G., Marra, P., Lecci, R., Pinardi, ..., **Verri, G.**, ... & Negro, G., 2017. *SeaConditions: a web and mobile service for safer professional and recreational activities in the Mediterranean Sea*, *Nat. Hazards Earth Syst. Sci.*, 17, 533-547, <https://doi.org/10.5194/nhess-17-533-2017>

PROCEEDINGS PAPERS

- Mirto M., Fiore S., Bacciu V., Sirca C., Costa Saura J. M. , Scardigno S., Nassisi P., Nuzzo A., D'Anca A., Aloisio A., Verri G., Coppini G., Caputo I.; Pirone L.; Valentini R., Spano D., Aloisio G. (2022). OFIDIA2: An Operational Platform for Fire Danger Prevention and Monitoring Environmental Sciences Proceedings, 17, 4., doi: 10.3390/environsciproc2022017004
- Coppini, G., Pinardi, N., Oddo, P., Awad, E., Bonaduce, A., Calcagnile, E., Ciliberti, S. A., Federico, I., Galati, M. B., Lecci, R., Liubartseva, S., Mancini, M., Mannarini, G., Shchekinova, E., **Verri, G.** (2013). The operational research in support to decisional instruments. Contribute to III Convegno Nazionale di Oceanografia Operativa, 3-5 June 2013, Oristano, Italy.
- Coppini, G., Liubartseva, S., Lecci, R., Creti, S., **Verri, G.**, Clementi, E., Pinardi, N., 2018. *Toward 3D Modeling the Plastic Marine Debris in the Mediterranean*. In *Proceedings of the International Conference on Microplastic Pollution in the Mediterranean Sea* (pp. 37-45). Springer, Cham
- Umgiesser G, Garreau Pierre, Arcilla As, Clementi E, Salon S, Ravdas M, Federico I, Zodiatis G, Ferrarin C, **Verri G**, Cossarini G, Sotillo Mg, Cucco A, Sorgente R, Mourre B, Vilibic I, Sammartino S, Coppini G, Fanjul Ea (2018). Modeling in the Mediterranean Sea: the MonGOOS contribution. Operational Oceanography serving Sustainable Marine Development. Proceedings of the Eight EuroGOOS International Conference. 3-5 October 2017, Bergen, Norway. E. Buch, V. Fernández, D. Eparkhina, P. Goringe and G. Nolan (Eds.) EuroGOOS. Brussels, Belgium. 2018. D / 2018 / 14.040 / 1 ISBN 978-2-9601883-3-2. pp.295-304. <https://archimer.ifremer.fr/doc/00450/56155/>

POST GRADUATED EDUCATION

- *Dates (from – to)* January 2013 – May 2016
- *Institution* Bologna University
- *Research Topics* **PhD in Environmental Science**
Project Title: Predictability studies for Regions Of Freshwater Influence, ROFIs.
- *Dates (from – to)* December 2009 - March 2011
- *Institution* Università degli studi di Roma La Sapienza
- *Achieved Title* **II level Master In Energy Efficiency and Renewable Energies (EFER)**

EDUCATION

- *Dates (from – to)* November 2006 – July 2009
- *Institution* Università del Salento
- *Topic* **Geophysics. Atmosphere Physics and Oceanography**
- *Achieved Title* 110/110 cum laude . Thesis Title “Measure and Assess of turbulent fluxes on complex real topography”
- *National title class* **Master's Degree (20/S class)**

- *Dates (from – to)* November 2002 – October 2006
- *Institution* Università' del Salento
- *Topic* Physics
- *Achieved Title* 110/110 cum laude. Thesis Title "Gravity anomalies and structure of lithosphere"
- *National Title Class* **Bachelor's degree** (25 class)

- *Dates (from – to)* September 1997 - July 2002
- *Institution* Banzi Bazoli High school Lecce
- *Achieved Title* 100/100 cum laude
- *National title class* High school diploma

LANGUAGE SKILLS

MOTHER TONGUE

Italian

OTHER LANGUAGE

Self-assessment

English

C1 Level in Reading and Writing, B2 Level in Speaking and Listening

European level (*)

(*) Common European Framework of Reference for Languages

TECHNICAL SKILLS

Working with the ocean model NEMO for regional to subregional scale applications
 Working with hydrology model WRF HYDRO.
 Working with mesoscale meteorological model WRF.
 Working with and developing the ocean model SHYFEM MPI for coastal scale application
 Developing an Estuarine Box model for solving the estuarine water exchange

Very good competence using operating system Windows, Linux and Mac OS X.
 Excellent knowledge of packages of operators for manipulating netCDF and GRIB files: NCO and CDO
 Good competence in Parallel Computing with MPI and OPENMP
 Excellent knowledge of compiled and interpreted languages as Fortran, Matlab, NCL
 Basic knowledge of Python interpreted languages
 Excellent knowledge of Latex markup language
 Basic knowledge of GIS software: QGIS and ArcGIS