

Giulia Bonino, Ph.D.

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October 8, 2024

Employment History

- April 2023 **Junior Scientist**
Fondation Euro-Mediterranean Center on Climate Change Foundation (CMCC)
ESYDA - Earth System Modelling and Data Assimilation, Bologna, Italy
Research Topic: Marine heatwaves; Biogeochemical modelling
- April 2021 – April 2023 **Post-Doctoral fellow**, ESA “Climate Change Initiative (CCI) Research Fellowship”
co-funded by Euro Mediterranean Center on Climate Change Foundation (CMCC)
Ocean and Data Assimilation Division, Bologna, Italy
Research Topic: FEVERSEA - Framework for marine heat wave EVENTS integrating Remote Sensing and numericAl simulations
- 2019 – 2021 **Post-Doctoral Researcher**
Euro-Mediterranean Center on Climate Change Foundation (CMCC)
Ocean and Data Assimilation Division, Bologna, Italy
Research Topic: Air-sea interaction in NEMO ocean model
- 2018 – 2019 **Post-Doctoral Researcher**
Euro-Mediterranean Center on Climate Change Foundation (CMCC)
Ocean and Data Assimilation Division, Bologna, Italy
Research Topic: Analysis of the Eastern Boundary Upwelling Systems (EBUS) variability.

Education

- 2015 – 2019 **Ph.D. in Science and Management of Climate Change**
Ca’Foscari University in collaboration with the Euro-Mediterranean Center on Climate Change Foundation (CMCC)
Thesis title: *A modelling framework for EBUS: from seasonal to decadal time scales.*
- 2018 **Ph.D. period abroad**, 6 months
Program in Ocean Science and Engineering, Georgia Institute of Technology
Atlanta, Georgia, USA
- 2013 – 2015 **M.Sc. Marine Sciences** University of Genoa.
Thesis title: *Implementation and validation of a wave model in the Ligurian Sea.*
- 2009 – 2012 **B.Sc. Environmental Sciences** University of Genoa.

Research Publications

Publications in peer-reviewed journals

- 1 Darmaraki, S., D. Denaxa, I. Theodorou, E. Livanou, D. Rigatou, D. E. Raitsos, O. Stavrakidis-Zachou, D. Dimarchopoulou, **G. Bonino**, R. McAdam, E. Organelli, P. AlexiaA. Parasyris. “Marine heatwaves in the mediterranean sea: A literature review”. *Mediterranean Marine Science*, 586–620.
🔗 [doi:10.12681/mms.38392](https://doi.org/10.12681/mms.38392)

- 2 **Bonino, G.**, G. Galimberti, S. Masina, R. McAdam, & E. Clementi. "Machine learning methods to predict sea surface temperature and marine heatwave occurrence: A case study of the mediterranean sea". *Ocean Science* 20, (2), 417–432. [🔗 doi:10.5194/os-20-417-2024](https://doi.org/10.5194/os-20-417-2024)
- 3 Denaxa, D., G. Korres, **G. Bonino**, S. Masina, & M. Hatzaki. "The role of air–sea heat flux for marine heatwaves in the mediterranean sea". *State of the Planet 4-osr8*, 11. [🔗 doi:10.5194/sp-4-osr8-11-2024](https://doi.org/10.5194/sp-4-osr8-11-2024)
- 4 McAdam, R., **G. Bonino**, E. Clementi, & S. Masina. "Forecasting the mediterranean sea marine heatwave of summer 2022". *State of the Planet 4-osr8*, 13. [🔗 doi:10.5194/sp-4-osr8-13-2024](https://doi.org/10.5194/sp-4-osr8-13-2024)
- 5 **Bonino, G.**, S. Masina, G. Galimberti, & M. Moretti. "Southern europe and western asian marine heatwaves (sewa-mhws): A dataset based on macroevents". *Earth System Science Data* 15, (3), 1269–1285. [🔗 doi:10.5194/essd-15-1269-2023](https://doi.org/10.5194/essd-15-1269-2023)
- 6 **Bonino, G.**, D. Iovino, L. Brodeau, & S. Masina. "The bulk parameterizations of turbulent air–sea fluxes in nemo4: The origin of sea surface temperature differences in a global model study". *Geoscientific Model Development* 15, (17), 6873–6889. [🔗 doi:10.5194/gmd-15-6873-2022](https://doi.org/10.5194/gmd-15-6873-2022)
- 7 Gunduz, M., S. Causio, **G. Bonino**, L. Vandenbulcke, M. Gregorie, L. Lima, S. Ciliberti, M. Ilıcak, A. Aydogdu, S. Masina, G. Coppini, N. Pinardi. "Coastal upwelling along the turkish coast of the black sea: Its role in the distribution of the hydrographic properties". *Copernicus marine service ocean state report, issue 6, Journal of Operational Oceanography*.
- 8 **Bonino, G.**, E. Lovecchio, N. Gruber, M. Münnich, S. Masina, & D. Iovino. "Drivers and impact of the seasonal variability of the organic carbon offshore transport in the canary upwelling system". *Biogeosciences* 18, (8), 2429–2448. [🔗 doi:10.5194/bg-18-2429-2021](https://doi.org/10.5194/bg-18-2429-2021)
- 9 **Bonino, G.**, E. Di Lorenzo, S. Masina, & D. Iovino. "Interannual to decadal variability within and across the major eastern boundary upwelling systems". *Scientific reports* 9, (1), 1–14. [🔗 doi:10.1038/s41598-019-56514-8](https://doi.org/10.1038/s41598-019-56514-8)
- 10 **Bonino, G.**, S. Masina, D. Iovino, A. Storto, & H. Tsujino. "Eastern boundary upwelling systems response to different atmospheric forcing in a global eddy-permitting ocean model". *Journal of Marine Systems* 197, 103178. [🔗 doi:10.1016/j.jmarsys.2019.05.004](https://doi.org/10.1016/j.jmarsys.2019.05.004)

Technical Reports

- 1 **Bonino, G.**, D. Iovino, & S. Masina. Bulk formulations in nemov.4: Algorithms review and sea surface temperature response in orca025 case study. Retrieved from [🔗 https://doi.org/10.25424/cmcc/bulk_formulas_nemo_report](https://doi.org/10.25424/cmcc/bulk_formulas_nemo_report)

Field Experience

- 2018  **"Raprocán 1018 Cruise"**,
 Ángeles Alvariño Research Vessel, IEO, Spain [19 November - 31 November 2018]
 Study Area: Canary Islands
 Chief Scientist: Pedro Vélez Belchí (IEO)

Conferences

- 2024  **55TH INTERNATIONAL LIÈGE COLLOQUIUM ON OCEAN DYNAMICS**
 Giulia Bonino, Ronan McAdam, Panos Athanasiadis, Carmen Alvarez-Castro, Leone Cavicchia, Regina R. Rodrigues, Enrico Scoccimarro, Stefano Tibaldi, Silvio Gualdi, Simona Masina.
 Subtropical ridges over the Mediterranean Sea determine summer marine heatwaves

Conferences (continued)

- 2024 **Ocean Sciences meeting**
Giulia Bonino, Ronan McAdam, Panos Athanasiadis, Carmen Alvarez-Castro, Leone Cavicchia, Regina R. Rodrigues, Enrico Scoccimarro, Stefano Tibaldi, Silvio Gualdi, Simona Masina. Sub-tropical ridges over the Mediterranean Sea determine summer marine heatwaves
- 2023 **54TH INTERNATIONAL LIÈGE COLLOQUIUM ON OCEAN DYNAMICS**
Bonino, G., Galimberti, G., Masina, S., McAdam, R., Clementi, E. Machine learning methods to predict sea surface temperature and marine heatwave occurrence: A case study of the Mediterranean Sea.
- 2022 **2022 Living Planet Symposium (Bonn, Germany)**
Bonino, G., Masina, S., Galimberti G., Moretti, M. and Cipollini, P. MHWs in ESA CCI SST: FEVERSEA project.
- 2022 Ocean Sciences meeting (Virtual)**
Bonino, G., Masina, S., Galimberti G., Moretti, M. and Cipollini, P. MHWs in ESA CCI SST: FEVERSEA project.
- 2020 **Virtual 8th SISC Annual Conference**
- 2020 Ocean Sciences meeting**
Bonino, G., Di Lorenzo, E., Masina, S. and Iovino, D. Interannual to decadal variability within and across the major eastern boundary upwelling systems.
- Virtual EGU general Assembly**
Bonino, G., Iovino, D., and Masina, S. Ocean sensitivity to bulk formulae parameterization: A NEMO-ORCAo25 model study.
- 2019 **EGU general Assembly**
- 2018 **7th SISC Annual Conference**
- 2018 Ocean Sciences meeting**
Bonino, G., Masina, S., Iovino, D., Storto, A., and Di Lorenzo, E.. The response of major eastern boundary upwelling systems to different atmospheric forcing.
- 2016 **Clivar – Pirata- Preface Tropical Atlantic Variability Conference**
- The 8th International Workshop on Modeling the Ocean (IWMO)**

Summer School

- 2023 **ICTP-CLIVAR Summer School on Marine Heatwaves**
Trieste, Italy
- 2019 **ICTP-CLIVAR Summer School on Oceanic Eastern Boundary Upwelling Systems**
Trieste, Italy
- 2017 **WE-Heraeus Summer School on Physics of the Ocean"Physikzentrum Bad Honnef"**
Bonn, Germany
- 2016 **The Global Ocean Week**
Toulouse, France (with grant)

Skills

- Languages **Italian (L1-Mothertongue), English (Advanced), Spanish (Intermediate, fluent), French (Basic)**
- Coding **Python, Matlab, Linux-Bash, FORTRAN, L^AT_EX, NCO (NetCDF), CDO (NetCDF)**
- Modelling **NEMOv3.6-v4.0, NEMO-AGRIF coupling, Biogeochemical Flux Model (BFM), SHYFEM (unstructured ocean model)**

Miscellaneous Experience

Awards and Achievements

- 2009 - 2013  **Merit Award**, University of Genoa
- 2012  **Erasmus Scholarship**, University of Genoa
- 2014 - 2015  **Post-lauream Scholarship**, University of Genoa

Certification

- 2015  GRE Test
-  B2 English language level test
- 2009  **Driving licences**. AM, A1, B
- 2013  **Diving certification**. PADI: Open Water Diver

References

1. Dr. Simona Masina

Institute Head, Euro-Mediterranean Center on Climate Change Foundation (CMCC),
IESP - Institute for Earth System Predictions

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2. Dr. Dr. Momme Butenschön

Senior Researcher, Euro-Mediterranean Center on Climate Change Foundation (CMCC),
ESYDA - Earth System Modelling and Data Assimilation, Bologna, Italy

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