

**Nadia Pardini**

**Curriculum Vitae**



**Summary**

Personal Details .....2  
Education .....2  
Research interests.....2  
Awards.....3  
Italian Professional Experience.....3  
US Professional Experience.....3  
Italian and international advisory committees (Last 10 years only) .....3  
Editorial Activities .....4  
Books .....4  
Publications.....5  
Refereed Journal publications (Last 5 years) .....5  
Funding History (Last 5 years).....10

## Personal Details

Birth date: February 22, 1956

Nationality: Italian

Office:

Department of Physics and Astronomy

Alma Mater Studiorum, University of Bologna

Viale Berti Pichat 8

40127 Bologna, Italy

Tel.: +39-051-209 5023

E-Mail: [nadia.pinardi@unibo.it](mailto:nadia.pinardi@unibo.it)

Web site: <https://www.sincem.unibo.it/index.php/personal-pinardi>

Web site: <https://www.unibo.it/sitoweb/nadia.pinardi/en>

## Education

1976-1980: Degree in Physics, Bologna University, 110/110 cum laude.

1981-1983: Master in Applied Physics, Harvard University, Cambridge, U.S.A.

1983-1985: Ph.D. in Applied Physics (Physical Oceanography), Harvard University, Cambridge, U.S.A.

## Research interests

Nadia PINARDI holds a Ph.D. in Applied Physics from Harvard University, and she is full professor of Oceanography at Bologna University. **Her interests range from ocean numerical modelling and predictions to data assimilation, numerical modelling of the marine physical-biological interactions and pollutants at sea.** She has written more than hundred and eighty papers in peer reviewed journals on a wide range of subjects. The last topic of her research is the understanding of uncertainties in ensemble forecasting, oil spill numerical modelling coupled to operational oceanographic forecasts and the analysis of climate indices in the Mediterranean Sea, such the Mediterranean Sea Overturning Circulation index.

**Her major achievement is the conceptual design and practical implementation of ocean forecasting systems across the world ocean:** she started with the contribution to the very first real time ocean forecast in the California Current system to the complete development of monitoring, modelling and data assimilation components for the Mediterranean, Marmara and Black Sea. Furthermore, she used the products of the forecasting system to understand new ocean dynamics in the Mediterranean Sea (Pinardi et al., 2014, Pinardi et al., 2019) and to develop several new societal benefit applications.

She has been the director of the National Group of Operational Oceanography of the National Institute of Geophysics and Vulcanology from 2004 to 2013. She has been Member of the European Space Agency Space Advisory Group, of the European Environment Agency Scientific Advisory Committee and of the European Research Council for Earth Sciences.

She is Member of the European Academy of Sciences. She is Member of the Scientific Council of the Unesco Regional Bureau for Science and Culture in Europe.

From 2012 to 2019 she was co-president of the Joint Committee for Oceanography and Marine Meteorology (JCOMM) of UNESCO-IOC and WMO and she is, since 2019, elected vice-president of the Commission for Observation, Infrastructure and Information Systems (Infrastructure Commission) of WMO.

She is the Chair of the UN Decade of Ocean Science for Sustainable Development Program “CoastPredict” and she is director of the UN Decade Collaborative Center on Coastal Resilience hosted by the University of Bologna.

## Awards

2007: European Geophysical Union (EGU) Fridtjof Nansen Medal for Oceanography (<http://www.egu.eu/awards-medals/fridtjof-nansen/>).

2008: UNESCO Intergovernmental Oceanographic Commission (IOC) Roger Revelle Medal.

2015: **Italian Republic Honors “Commendatore Ordine al merito della Repubblica italiana”- for her scientific contribution in strategic fields for the sustainable development such as oceanography and climatology**

2017: Laurea Honoris Causa for Operational Oceanography at the University of Liege, Belgium.

( <https://events.uliege.be/dhcdr/docteurs-honoris-causa-2017/> )

## Italian Professional Experience

Year	Professional experience
2022-2026	Director, UN Decade Collaborative Center for Coastal Resilience
2018-today	Full Professor of Physical Oceanography at the University of Bologna, Dept. of Physics and Astronomy
2018-2022	Coordinator of the University of Bologna PhD program “Future Earth, Climate Change and societal Challenges” : <a href="https://phd.unibo.it/future-earth-climate-change-societal-challenges/en">https://phd.unibo.it/future-earth-climate-change-societal-challenges/en</a>
2016-2021	Coordinator of University of Bologna PhD program in “Geophysics”
1999- 2018	Associate Professor of Physical Oceanography at the University of Bologna, Dept. of Physics and Astronomy
2004-2013	Director of the National Group of Operational Oceanography, INGV
2001-2017	Associate researcher (scientific affiliation) at the Istituto Nazionale di Geofisica e Vulcanologia (INGV)
2000-2003	Associate researcher (scientific affiliation) at Istituto Geologia Marina-CNR, Bologna
1994-1998	Lecturer of Geophysical Fluid Dynamics at the University of Bologna, Italy.
1986-1999	Research scientist at the Centro Nazionale Ricerche (CNR), Bologna.

## US Professional Experience

Year	Professional experience
1986-1988	Post-Doctoral Fellow in Physical Oceanography, Harvard Univ., Cambridge, U.S.A. (6 months in a year)
1992-1994	Visiting scientist at the Geophysical Fluid Dynamics Laboratory, Princeton University, Princeton, New Jersey, USA (6 months a year).
1992-2001	Visiting scientist at the National Center for Atmospheric Research (NCAR), Boulder, Colorado (1 month in July)
2002-2011	Visiting scientist at the North West Research Associates, Colorado Research Associates (CoRA), Boulder, Colorado (1 month)
2012-2019	Visiting scientist at the Cooperative Institute for Research in Environmental Sciences (CIRES), Colorado University, Boulder, USA (1 month)
2022	Visiting scientist at the Mechanical Engineering Department of University of Colorado, Boulder, USA (1 month)

## Italian and international advisory committees (Last 10 years only)

Year	Professional experience
2006-2012	Chair of the Mediterranean Operational Oceanography Network (MOON)
2006-2012	Member of the Institute of Advanced Studies of Bologna University.
2006-2009	Member of the Proudman Oceanographic Laboratory (POL) Science Advisory Board.
2007-2010	Member of the Space Advisory Group, European FP7 Space Programme.
2006-2011	Member of the European Space Agency (ESA) Earth Science Advisory Committee

	(ESAC).
2008-2012	Member of the European Research Council (ERC), Committee for Earth Sciences (P10).
2007-2012	Member of the European Environmental Agency (EEA) Scientific Steering Committee.
2009-2016	Co-Chair of the Memorandum of Agreement for “Italy-China Program for Operational Oceanography and Climate Change Research”
2010-2015	Global Ocean Observing System (GOOS) National Contact person for the UNESCO-IOC
2012-2020	Co-president of the Joint Committee for Oceanography and Marine Meteorology (Joint WMO and IOC-Unesco Committee)
2015-2022	<b>Member of the Strategic Board</b> of the Centro Mediterraneo sui Cambiamenti Climatici
2018-2022	<b>Member</b> of the Mercator Ocean International Management Board
2019- 2023	<b>Elected Vice-president</b> , World Meteorological Organization Commission for Observation, Infrastructure and Information Systems (Infrastructure Commission)
2019	Member of the evaluation Committee for the Leibniz Institute for Baltic Sea Research, Warnemunde, DE
2019	International Member of the Gulf Of Mexico Research Initiative (GOMRI) Synthesis Workshop
2019-present	Member of the International scientific Steering Committee of SOCIB, Palma del Mallorca, Spain
2020-present	<b>Elected member of the European Academy of Sciences</b>
2021-present	<b>Chair of the UN Decade of Ocean Science endorsed Project “CoastPredict”</b>
2021-2024	Member of the “Assemblea della Commissione Nazionale Italiana per l’UNESCO” (CNIU)
2021-2024	<b>Co-Chair of the Knowledge Hub for Sea Level Rise joint initiative of JPI-Climate and JPI-Oceans</b>
2021-2024	Member of the International Steering Committee of MEOPAR (Marine Environmental Observation, Prediction and Response Network)
2021-2024	Member of the International Advisory Board of the Deutsche Allianz Meeresforschung (DAM), Berlino, Germany
2023-2025	<b>Member of the Scientific Council of the UNESCO Regional Bureau for Science and Culture in Europe, Venice</b>

## Editorial Activities

1999-2006: **Topic Editor** of *Annales Geophysicae*, EGU Journal, Ocean section.

2005-2017: **Topic Editor** of Ocean Science, EGU Journal

2007-2020: **Associate editor** of *Journal of Operational Oceanography*

2011-2017: Member of the Editorial Board of **The Sea**, Journal of Marine Research, Yale University

2012-2017: **Topic Editor** of *Natural Hazards and Earth System Science*, EGU Journal

2017-2023: **Editor**, *Journal of Geophysical Research Oceans*

## Books

Pinardi, N. and J. Woods, 2002. Ocean Forecasting: Conceptual Basis and Applications Springer Science & Business Media - 472 pages

Pinardi Nadia, 2009. Misurare il Mare, Bononia University Press - 83 pages

Pinardi, N., P.F.J. Lermusiaux, K.H. Brink and R.H.Preller, 2017. The Science of Ocean Prediction. In “The Sea” Vol. 17, 707 pages, Supplement to the *Journal of Marine Research*, Volume 75, Issues 3 and 6, Yale University Press.

## Publications

### Web of Science (as of January 24, 2023)

Publications found	189
Sum of the Times Cited	7343
Average Citations per Item	39
h-index	44

### Google Scholar

Citations	12618
h-index	59
i10-index	175

### Refereed Journal publications (Last 5 years)

- 1) Zhaoyi Wang, Andrea Storto, **Nadia Pinardi**, Guimei Liu, and Hui Wang, 2017: Data assimilation of Argo profiles in a northwestern Pacific model. *Nat. Hazards Earth Syst. Sci.*, 17, 17–30, doi: 10.5194/nhess-17-17-2017.
- 2) Coppini, G., Marra, P., Lecci, R., **Pinardi, N.**, Cretì, S., Scalas, M., Tedesco, L., D'Anca, A., Fazioli, L., Olita, A., Turrisi, G., Palazzo, C., Aloisio, G., Fiore, S., Bonaduce, A., Kumkar, Y. V., Ciliberti, S. A., Federico, I., Mannarini, G., Agostini, P., Bonarelli, R., Martinelli, S., Verri, G., Lusito, L., Rollo, D., Cavallo, A., Tumolo, A., Monacizzo, T., Spagnulo, M., Sorgente, R., Cucco, A., Quattrocchi, G., Tonani, M., Drudi, M., Nassisi, P., Conte, L., Panzera, L., Navarra, A., and 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, doi: 10.5194/nhess-17-533-2017.
- 3) Clementi, E., Oddo, P., Drudi, M., **Pinardi, N.**, Korres, G., Grandi, A., 2017. Coupling hydrodynamic and wave models: first step and sensitivity experiments in the Mediterranean Sea, *Ocean Dynamics*, doi: 10.1007/s10236-017-1087-7
- 4) G. Verri, **N. Pinardi**, David Gochis, Joseph Tribbia, Antonio Navarra, Giovanni Coppini, and Tomislava Vukicevic, 2017. A meteo-hydrological modelling system for the reconstruction of river runoff: the case of the Ofanto river catchment., *Nat. Hazards Earth Syst. Sci. Discuss.*, doi: 10.5194/nhess-17-1741-2017
- 5) Verri, G., **Pinardi, N.**, Oddo, P., Ciliberti, S. A. Coppini, G., 2018. River runoff influences on the Central Mediterranean overturning circulation. *Climate Dynamics*, doi: 10.1007/s00382-017-3715-9
- 6) Nagy, H., Elgindy, A., **Pinardi, N.**, Zavatarelli, M., Oddo, P. (2017). A nested pre-operational model for the Egyptian shelf zone: Model configuration and validation/calibration. *DYNAMICS OF ATMOSPHERES AND OCEANS*, vol. 80, p. 75-96, ISSN: 0377-0265, doi: 10.1016/j.dynatmoce.2017.10.003
- 7) Mussap, G., Zavatarelli, M., **N. Pinardi**, 2017. Linking 1D coastal ocean modelling to environmental management: an ensemble approach, *Ocean Dynamics*, doi: 10.1007/s10236-017-1106-8
- 8) **Pinardi, N.**; Cavaleri, L.; Coppini, G.; De Mey, P.; Fratianni, C.; Huthnance, J.; Lermusiaux, P. F. J.; Navarra, A.; Preller, R.; Tibaldi, S., 2017. From weather to ocean predictions: an historical viewpoint. *Journal of Marine Research*, 103-159(57), doi: 10.1357/002224017821836789

- 9) Trotta, F.; **Pinardi, N.**; Fenu, E.; Grandi, A.; Lyubartsev, V., 2017. Multi-nest high-resolution model of submesoscale circulation features in the Gulf of Taranto. *Ocean Dynamics*, 67: 1609., doi: 10.1007/s10236-017-1110-z.
- 10) Treguier, Anne Marie; Chassignet, Eric P.; Boyer, Arnaud Le; **Pinardi, N.**, 2017. Modeling and forecasting the weather of the ocean at the mesoscale. *Journal of Marine Research*. *Journal of Marine Research*, Volume 75, Number 3, pp. 301-329(29), doi: 10.1357/002224017821836842
- 11) **Pinardi, N.**, E. Özsoy, M.A. Latif, F. Moroni, A. Grandi, G. Manzella, F. De Strobel, and V. Lyubartsev, 2018: Measuring the Sea: Marsili's Oceanographic Cruise (1679–80) and the Roots of Oceanography, *J. Phys. Oceanogr.*, 48, 845–860, doi: 10.1175/JPO-D-17-0168.1
- 12) Cherchi, A., Satyaban Bishoyi Ratna, Simona Masina, Andrea Storto, Chunxue Yang, Claudia Fratianni, Simona Simoncelli, **N. Pinardi**, 2017. Evaluation of amip-type atmospheric fields as forcing for Mediterranean Sea and global ocean reanalyses. *ANNALS OF GEOPHYSICS*, 61, 5, OC559, 2018; DOI:10.4401/ag-7793
- 13) Karina von Schuckmann, .... **N. Pinardi**, .... (2018) Copernicus Marine Service Ocean State Report, *Journal of Operational Oceanography*, 11:sup1, S1-S142, DOI:10.1080/1755876X.2018.1489208
- 14) Aydoğdu, A., **Pinardi, N.**, Özsoy, E., Danabasoglu, G., Gürses, Ö., and Karspeck, A., 2018. Circulation of the Turkish Straits System under interannual atmospheric forcing, *Ocean Sci.*, 14, 999-1019, doi: 10.5194/os-14-999-2018
- 15) Aydoğdu, A., Hoar, T. J., Vukicevic, T., Anderson, J. L., **Pinardi, N.**, Karspeck, A., Hendricks, J., Collins, N., Macchia, F., and Özsoy, E., 2018. OSSE for a sustainable marine observing network in the Sea of Marmara, *Nonlin. Processes Geophys.*, 25, 537-551, doi: 10.5194/npg-25-537-2018
- 16) **Pinardi, N.**, J. Stander et al., 2019. The Joint IOC (of UNESCO) and WMO Collaborative Effort for Met-Ocean Services. *Front. Mar. Sci.* 6:410. doi: 10.3389/fmars.2019.00410
- 17) Pearlman, J., ... **N. Pinardi**, ... et al., 2019. Evolving and Sustaining Ocean best Practices and standards for the next decade. *Front. Mar. Sci.* | doi: 10.3389/fmars.2019.00277
- 18) **Pinardi, N.**, P. Cessi, F. Borile, and C.L. Wolfe, 2019: The Mediterranean Sea Overturning Circulation. *J. Phys. Oceanogr.*, 49, 1699–1721, doi: 10.1175/JPO-D-18-0254.1
- 19) Palazov A, Ciliberti S, Peneva E, Gregoire M, Staneva J, Lemieux-Dudon B, Masina S, **Pinardi N**, Vandenbulcke L, Behrens A, Lima L, Coppini G, Marinova V, Slabakova V, Lecci R, Creti S, Palermo F, Stefanizzi L, Valcheva N and Agostini P (2019) Black Sea Observing System. *Front. Mar. Sci.* 6:315. doi: 10.3389/fmars.2019.00315
- 20) Le Traon PY, ..., **Pinardi N**, et al., 2019. From Observation to Information and Users: The Copernicus Marine Service Perspective. *Front. Mar. Sci.* 6:234. doi: 10.3389/fmars.2019.00234
- 21) Martín Míguez B, ..., **Pinardi N**, et al., 2019. The European Marine Observation and Data Network (EMODnet): Visions and Roles of the Gateway to Marine Data in Europe. *Front. Mar. Sci.* 6:313. doi: 10.3389/fmars.2019.00313
- 22) Tintore, J., **N. Pinardi** et al., 2019. Challenges for Sustained Observing and Forecasting Systems in the Mediterranean Sea. *Front. Mar. Sci.* 6:568. doi: 10.3389/fmars.2019.00568
- 23) G. Mannarini, D. N. Subramani, P. F. J. Lermusiaux and **N. Pinardi**, "Graph-Search and Differential Equations for Time-Optimal Vessel Route Planning in Dynamic Ocean

- Waves, 2020. *IEEE Transactions on Intelligent Transportation Systems*, vol. 21, no. 8, pp. 3581-3593, doi: 10.1109/TITS.2019.2935614.
- 24) Sepp Neves AA, **Pinardi N**, Navarra A and Trotta F, 2020. A General Methodology for Beached Oil Spill Hazard Mapping. *Front. Mar. Sci.* 7:65. doi: 10.3389/fmars.2020.00065
  - 25) Ruti, P., O. Tarasova, J. Keller, G. Carmichael, Ø. Hov, S. Jones, D. Terblanche, C. Anderson-Lefale, A. Barros, P. Bauer, V. Bouchet, G. Brasseur, G. Brunet, P. DeCola, V. Dike, M.D. Kane, C. Gan, K. Gurney, S. Hamburg, W. Hazeleger, M. Jean, D. Johnston, A. Lewis, P. Li, X. Liang, V. Lucarini, A. Lynch, E. Manaenkova, N. Jae-Cheol, S. Ohtake, **N. Pinardi**, J. Polcher, E. Ritchie, A.E. Sakya, C. Saulo, A. Singhee, A. Sopaheluwakan, A. Steiner, A. Thorpe, and M. Yamaji, 0: Advancing Research for Seamless Earth System Prediction, 2020. *Bull. Amer. Meteor. Soc., Bulletin of the American Meteorological Society*, 101(1), E23-E35. doi: 10.1175/BAMS-D-17-0302.1
  - 26) Verri, G, **N. Pinardi**, F. Bryan, Y. Tseng, G. Coppini, E. Clementi, 2020. A box model to represent estuarine dynamics in mesoscale resolution ocean models, 148, 101587-10600, 10.1016/j.ocemod.2020.101587.
  - 27) Barker, C. H. and Kourafalou, V. H. and Beegle-Krause, CJ and Bouffadel, M. and Bourassa, M. A. and Buschang, S. G. and Androulidakis, Y. and Chassignet, E. P. and Dagestad, K.-F. and Danmeier, D. G. and Dissanayake, A. L. and Galt, J. A. and Jacobs, G. and Marcotte, G. and Özgökmen, T. and **Pinardi, N.** and Schiller, R. V. and Socolofsky, S. A. and Thrift-Viveros, D. and Zelenke, B. and Zhang, A. and Zheng, Y., 2020. Progress in Operational Modeling in Support of Oil Spill Response, *Journal of Marine Science and Engineering*, 8 (9), 668, doi:10.3390/jmse8090668
  - 28) Karina von Schuckmann ((Editor)), ..., **N. Pinardi**, etc., 2020. Copernicus Marine Service Ocean State Report, Issue 4, *Journal of Operational Oceanography*, 13:sup1, S1-S172, DOI: 10.1080/1755876X.2020.1785097
  - 29) Federico, I., **Pinardi, N.**, Lyubartsev, V., Maicu, F., Causio, S., Trotta, F., et al., 2020. Observational evidence of the basin-wide gyre reversal in the Gulf of Taranto. *Geophysical Research Letters*, 47, e2020GL091030. <https://doi.org/10.1029/2020GL091030>
  - 30) Ilicak M., I. Federico, I. Barletta, S. Mutlu, H. Karan, S. Ciliberti, E. Clementi, G. Coppini, **N. Pinardi**, 2021. Modeling of the Turkish Strait System Using a High Resolution Unstructured Grid Ocean Circulation Model, *Journal of Marine Science and Engineering* 9 (7), 769, doi: 10.3390/jmse9070769
  - 31) Smith, K.M., S. Kern, P. E. Hamlington, M. Zavatarelli, **N. Pinardi**, E. F. Klee, K. E. Niemeyer, 2021. BFM17 v1. 0: a reduced biogeochemical flux model for upper-ocean biophysical simulations, *Geoscientific Model Development* 14 (5), 2419-2442, doi: 10.5194/gmd-14-2419-2021
  - 32) Maicu, F., J. Alessandri, **N. Pinardi**, G. Verri, G. Umgiesser, S. Lovo, S. Turolla, T. Paccagnella, A. Valentini, 2021. Downscaling With an Unstructured Coastal-Ocean Model to the Goro Lagoon and the Po River Delta Branches, *Front. Mar. Sci.* 8:647781. doi: 10.3389/fmars.2021.647781
  - 33) Trotta F, Federico I, **Pinardi N**, Coppini G, Causio S, Jansen E, Iovino D and Masina S (2021). A Relocatable Ocean Modeling Platform for Downscaling to Shelf-Coastal Areas to Support Disaster Risk Reduction. *Front. Mar. Sci.* 8:642815. doi: 10.3389/fmars.2021.642815
  - 34) T. Dauxois, T. Peacock, P. Bauer, C. P. Caulfield, C. Cenedese, C. Górlé, G. Haller, G. N. Ivey, P. F. Linden, E. Meiburg, **N. Pinardi**, N. M. Vriend, and A. W. Woods. *Confronting Grand Challenges*



- in environmental fluid mechanics. in 2021. *Phys. Rev. Fluids* 6, 020501, doi: 10.1103/PhysRevFluids.6.020501
- 35) Maicu F, Alessandri J, **Pinardi N**, Verri G, Umgiesser G, Lovo S, Turolla S, Paccagnella T and Valentini A (2021). Downscaling With an Unstructured Coastal-Ocean Model to the Goro Lagoon and the Po River Delta Branches. *Front. Mar. Sci.* 8:647781. doi: 10.3389/fmars.2021.647781
  - 36) Smith, K. M., Kern, S., Hamlington, P. E., Zavatarelli, M., **Pinardi, N.**, Klee, E. F., and Niemeyer, K. E. (2021). BFM17 v1.0: a reduced biogeochemical flux model for upper-ocean biophysical simulations. *Geosci. Model Dev.*, 14, 2419–2442. doi: 10.5194/gmd-14-2419-2021
  - 37) Trotta F, Federico I, **Pinardi N**, Coppini G, Causio S, Jansen E, Iovino D and Masina S (2021). A Relocatable Ocean Modeling Platform for Downscaling to Shelf-Coastal Areas to Support Disaster Risk Reduction. *Front. Mar. Sci.* 8:642815. doi: 10.3389/fmars.2021.642815
  - 38) Ilicak M., Federico I., Barletta I., Mutlu S., Karan H., Ciliberti S.A., Clementi E., Coppini G., **Pinardi N.** (2021). Modeling of the Turkish Strait System Using a High Resolution Unstructured Grid Ocean Circulation Model. *J. Mar. Sci. Eng.* 2021,9,769. doi: 10.3390/jmse9070769
  - 39) Gallotti G., Santo M.A., Apostolidou I., Alessandri J., Armigliato A., Basu B., Debele S., Domeneghetti A., Gonzalez-Ollauri A., Kumar P., et al. (2021) On the Management of Nature-Based Solutions in Open-Air Laboratories: New Insights and Future Perspectives. *Resources* 2021, 10, 36. doi: 10.3390/resources10040036
  - 40) Shahzadi, K., **N. Pinardi**, A. Barth, C. Troupin, V. Lyubartsev and S. Simoncelli, 2021 A New Global Ocean Climatology. *Frontiers in Marine Science* (31 August 2021). doi: 10.3389/fenvs.2021.711363
  - 41) Escudier R, Clementi E, Cipollone A, Pistoia J, Drudi M, Grandi A, Lyubartsev V, Lecci R, Aydogdu A, Delrosso D, Omar M, Masina S, Coppini G and Pinardi N (2021). High Resolution Reanalysis for the Mediterranean Sea. *Front. Earth Sci.* 9:702285. doi: 10.3389/feart.2021.702285
  - 42) Ciliberti, S.A.; Grégoire, M.; Staneva, J.; Palazov, A.; Coppini, G.; Lecci, R.; Peneva, E.; Matreata, M.; Marinova, V.; Masina, S.; **N. Pinardi** et al. 2021. Monitoring and Forecasting the Ocean State and Biogeochemical Processes in the Black Sea: Recent Developments in the Copernicus Marine Service. *J. Mar. Sci. Eng.*, 9, 1146. doi: 10.3390/jmse9101146
  - 43) Manzella, G.M.R., F. De Strobel, **N. Pinardi** and W. Emery, 2022. Chapter One - A narrative of historical, methodological, and technological observations in marine science. Editor(s): Giuseppe Manzella, Antonio Novellino, *Ocean Science Data*, Elsevier, Pages 3-64, ISBN 9780128234273. doi: 10.1016/B978-0-12-823427-3.00004-9
  - 44) Park, K., I. Federico, E. Di Lorenzo, T. Ezer, K. M. Cobb, **N. Pinardi**, G. Coppini, 2022. The contribution of hurricane remote ocean forcing to storm surge along the Southeastern U.S. coast. *Coastal Engineering*, Volume 173, 104098. doi: doi.org/10.1016/j.coastaleng.2022.104098
  - 45) Ciliberti, S.A.; Jansen, E.; Coppini, G.; Peneva, E.; Azevedo, D.; Causio, S.; Stefanizzi, L.; Creti', S.; Lecci, R.; Lima, L.; **Pinardi, N.** and A. Palasov, 2022. The Black Sea Physics Analysis and Forecasting System within the Framework of the Copernicus Marine Service. *J. Mar. Sci. Eng.* 2022, 10, 48. doi: 10.3390/jmse10010048
  - 46) Révelard A, Tintoré J, Verron J, Bahurel P, Barth JA, Belbéoch M, Benveniste J, Bonnefond P, Chassignet EP, Cravatte S, Davidson F, deYoung B, Heupel M, Heslop E, Hörstmann C, Karstensen J, Le Traon PY, Marques M, McLean C, Medina R, Paluszkiwicz T, Pascual A, Pearlman J, Petihakis G, **Pinardi N**, Pouliquen S, Rayner R, Shepherd I, Sprintall J, Tanhua T, Testor P, Seppälä J, Siddorn J, Thomsen S, Valdés L, Visbeck M, Waite AM, Werner F, Wilkin J and Williams B, 2022. Ocean Integration: The Needs and Challenges of Effective Coordination Within the Ocean Observing System. *Front. Mar. Sci.* 8:737671. doi: 10.3389/fmars.2021.737671
  - 47) Pranavam Ayyappan Pillai, U., **Pinardi, N.**, Federico, I., Causio, S., Trotta, F., Unguendoli, S., and Valentini, A.: Wind-wave characteristics and extremes along the Emilia-Romagna coast, 2022. *Nat. Hazards Earth Syst. Sci.*, 22, 3413–3433, <https://doi.org/10.5194/nhess-22-3413-2022>.



- 48) Umesh Pranavam Ayyappan Pillai, **N. Pinardi**, J. Alessandri, I. Federico, S. Causio, S. Unguendoli, A. Valentini, J. Staneva, 2022. A Digital Twin modelling framework for the assessment of seagrass Nature Based Solutions against storm surges, *Science of The Total Environment*, Volume 847, 157603, <https://doi.org/10.1016/j.scitotenv.2022.157603>.
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## Funding History (Last 5 years)

1. 2017-2019, **Co-principal Investigator** of the H2020 project MARISA. Development of situational sea awareness tools for maritime safety and security.
2. 2017-2020, **Co-principal Investigator** of the H2020 project SeaDataCloud. Development of observational methodologies for ocean climatologies and quality control.
3. 2018-2022, **Co-principal Investigator** H2020 project H2020 OPEn-air laboRAtories for Nature based solUtions to Manage hydro-meteo risks. Development of natural based solutions via numerical modeling of coastal areas against coastal erosion in climate change scenarios.
4. 2018-2020, **Principal responsible** @ UNIBO for the delivery of operational ocean forecasting data for ENI activities.
5. 2019-2023, **Co-principal Investigator** H2020 EuroSea Project: Development of an European Ocean Observing System.
6. 2020-2023, **Principal Investigator** for the Interreg Italy-Croatia European Project “Climate change information, monitoring and management tools for adaptation strategies in Adriatic coastal areas-AdriaClim” to develop, test and validate a local earth system model.
7. 2022-2027, Decade Collaborative Center for Coastal Resilience Project, endorsed by the UNESCO–IOC for the UN Decade for ocean science for sustainable development, financed by the Emilia-Romagna Region to the University of Bologna.
8. 2022-2026 **Co-principal investigator** for the HORIZON project EDITO-Underlying models for the European Digital Twin of the Ocean
9. 2022-2026 **Co-principal Investigator** for the Italian Project: Approccio Ecosistemico alla valutazione delle opere di compensazione e mitigazione in ambiente marino: Il caso studio dell’Hub portuale di Civitavecchia, funded by the autorità portuale di Civitavecchia.
10. 2022-2024 **Co-principal investigator** ESA project Sea Level and Coastal Hazards
11. 2023-2026 **Co-principal investigator** H-Europe EDITO-Lab for the development of the numerical models for the Digital Ocean infrastructure in support of Digital Twins.