

Pier Giuseppe Fogli

Curriculum Vitae

Personal informations:

Date of Birth: March 27, 1976
Nationality: Italian

Contacts

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Education:

Laurea in Marine Environmental Sciences, July 2003.
Score: 110/110 (cum laude).
Level in national or international classification: ISCED 5A
Laboratorio di Simulazioni Numeriche del Clima e degli Ecosistemi Marini (SINCEM, Ravenna),
Faculty of Mathematics, Physics and Natural Sciences, University of Bologna.
Dissertation title: I cambiamenti delle teleconnessioni tropici-extratropici indotti da alti livelli di CO₂.
Advisor: Prof. A. Navarra.

High school diploma, Industrial Chemistry. I.T.I.S. "N. Copernico", Ferrara, 1995.
Level in national or international classification: ISCED 3A

Professional experiences:

Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Ocean modeling and Data Assimilation Division (ODA)
Senior Research Associate, January 2015 - present.

Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Numerical Applications and Scenarios Division (ANS)
Senior Research Associate, January 2007 - 2014.

Istituto Nazionale di Geofisica e Vulcanologia (INGV)
Unità Funzionale di Climatologia Dinamica
Technologist (3rd level), January 2005 – December 2006.

Istituto Nazionale di Geofisica e Vulcanologia (INGV)
Unità Funzionale di Climatologia Dinamica
Grant holder, January 2004 – December 2004.

Training:

Introduction to Marconi KLN cluster, for users and developers, 2017, CINECA, Rome

Community Earth System Model (CESM) Tutorial 2012, National Center for Atmospheric Research (NCAR), Boulder, USA.

OASIS User Meeting 2009, Toulouse, France.

Advanced School on Parallel Computing, 2006, CINECA, Bologna.

Summer School on Parallel Computing, 2005, CINECA, Bologna.

Introduction to programming with the Message Passing technique, 2004, CINECA, Bologna.

Professional activities:

November 2011-January 2012

Visiting scientist at the Climate & Global Dynamics (CGD) division of the National Center for Atmospheric Research (NCAR), Boulder, USA.

Organizational activities:

Support activities for the WAVACS - COST Winter School "Water vapour in the climate system", February 6-12, 2011, San Servolo, Venice.

Support activities for the 4th SPARC General Assembly, 31 August-5 September 2008, CNR Bologna, Italy.

Other scientific activities:

Consortium Expert for the NEMO ocean model.

Participation to research projects:

2018

Copernicus Climate Change Service (C3S) seasonal forecast
Managed by the European Commission

2017-2018

ROMEO (Understanding the Role of Mesoscale Eddies in the global Ocean)
15th Call for PRACE Project Access

2015-2018

PRIMAVERA
HORIZON 2020 (EU Research and Innovation programme 2014-2020)

2014-2015

MyOcean follow-on
HORIZON 2020 (EU Research and Innovation programme 2014-2020)

2013-2017

Is-ENES2 (Infrastructure for the European Network for Earth System Modeling)
Supported by the European Commission, FP7

2012-

CORE-II (Coordinated Ocean-ice Reference Experiments – Phase II)

CLIVAR Working Group on Ocean Model Development (WGOMD)

2012-2015

GEMINA (MIUR/MATTM)

Funded by the Italian Government

2010-2012

CMIP5 (Coupled Model Intercomparison Project Phase 5)

World Climate Research Programme (WCRP/WMO)

2009-2012

COMBINE (Comprehensive Modelling of the Earth System for Better Climate Prediction and Projection)

Supported by the European Commission, FP7.

2009

SPARC/CCMVal (Stratospheric Processes And their Role in Climate/Chemistry-Climate Model Validation Activity)

World Climate Research Programme (WCRP/WMO)

2005-2009

ENSEMBLES (Ensembles-based Prediction of Climate Changes and Their Impacts)

Supported by the European Commission, FP6.

2004

PRISM (Program for Integrated Earth System Modelling)

Supported by the European Commission, FP6.

2004

Gli effetti sull'ambiente e sul clima delle grandi eruzioni esplosive: l'ignimbrite campana la più grande eruzione degli ultimi 200.000 anni nell'area mediterranea.

Supported by the FIRB-MIUR, Italy.

Publications:

1. Scoccimarro, E., **P.G. Fogli**, S. Gualdi (2017): The role of humidity in determining scenarios of perceived temperature extremes in Europe. Environ. Res. Lett. 12, doi:[10.1088/1748-9326/aa8cdd](https://doi.org/10.1088/1748-9326/aa8cdd).
2. Scoccimarro, E., **P.G. Fogli**, K.A. Reed, S. Gualdi, S. Masina, and A. Navarra (2017): Tropical Cyclone Interaction with the Ocean: The Role of High-Frequency (Subdaily) Coupled Processes. J. Climate, 30, doi:[10.1175/JCLI-D-16-0292.1](https://doi.org/10.1175/JCLI-D-16-0292.1).
3. Y. Tseng, H. Lin, H. Chen, K. Thompson, M. Bentsen, C. Boning, A. Bozec, C. Cassou, E. Chassignet, C. H. Chow, G. Danabasoglu, S. Danilov, R. Farneti, **P. G. Fogli**, Y. Fujii, S. Griffies, M. Ilıcak, T. Jung, S. Masina, A. Navarra, L. Patara, B. Samuels, M. Scheinert, D. Sidorenko, C. Sui, H. Tsujino, S. Valcke, A. Voldoire, Q. Wang (2016): North and Equatorial Pacific Ocean Circulation in the CORE-II Hindcast Simulations. Ocean Modell., 104, doi:[10.1016/j.ocemod.2016.06.003](https://doi.org/10.1016/j.ocemod.2016.06.003).
4. Q. Wang, M. Ilıcak, R. Gerdes, H. Drange, Y. Aksenov, D.A. Bailey, M. Bentsen, A. Biastoch, A. Bozec, C. Böning, C. Cassou, E. Chassignet, A.C. Coward, B. Curry, G. Danabasoglu, S. Danilov, E. Fernandez, **P.G. Fogli**, Y. Fujii, S.M. Griffies, D. Iovino, A. Jahn, T. Jung, W.G. Large, C. Lee, C. Lique, J. Lu, S. Masina, A.J.G. Nurser, B. Rabe, C. Roth, D. Salas y Mélia, B.L. Samuels, P. Spence, H. Tsujino, S. Valcke, A. Voldoire, X. Wang, S.G. Yeager (2016): An

assessment of the Arctic Ocean in a suite of interannual CORE-II simulations. Part I: Sea ice and solid freshwater, *Ocean Modell.*, 99, doi:[10.1016/j.ocemod.2015.12.008](https://doi.org/10.1016/j.ocemod.2015.12.008).

5. Q. Wang, M. Ilıcak, R. Gerdes, H. Drange, Y. Aksenov, D.A. Bailey, M. Bentsen, A. Biastoch, A. Bozec, C. Böning, C. Cassou, E. Chassignet, A.C. Coward, B. Curry, G. Danabasoglu, S. Danilov, E. Fernandez, **P.G. Fogli**, Y. Fujii, S.M. Griffies, D. Iovino, A. Jahn, T. Jung, W.G. Large, C. Lee, C. Lique, J. Lu, S. Masina, A.J.G. Nurser, B. Rabe, C. Roth, D. Salas y Mélia, B.L. Samuels, P. Spence, H. Tsujino, S. Valcke, A. Voldoire, X. Wang, S.G. Yeager (2016): An assessment of the Arctic Ocean in a suite of interannual CORE-II simulations. Part II: Liquid freshwater, *Ocean Modell.*, 99, doi:[10.1016/j.ocemod.2015.12.009](https://doi.org/10.1016/j.ocemod.2015.12.009).
6. M. Ilıcak, H. Drange, Q. Wang, R. Gerdes, Y. Aksenov, D.A. Bailey, M. Bentsen, A. Biastoch, A. Bozec, C. Böning, C. Cassou, E. Chassignet, A.C. Coward, B. Curry, G. Danabasoglu, S. Danilov, E. Fernandez, **P.G. Fogli**, Y. Fujii, S.M. Griffies, D. Iovino, A. Jahn, T. Jung, W.G. Large, C. Lee, C. Lique, J. Lu, S. Masina, A.J.G. Nurser, B., C. Roth, D. Salas y Mélia, B.L. Samuels, P. Spence, H. Tsujino, S. Valcke, A. Voldoire, X. Wang, S.G. Yeager (2016): An assessment of the Arctic Ocean in a suite of interannual CORE-II simulations. Part III: Hydrography and fluxes, *Ocean Modell.*, 100, doi:[10.1016/j.ocemod.2016.02.004](https://doi.org/10.1016/j.ocemod.2016.02.004).
7. G. Danabasoglu, S. G. Yeager, W. M. Kim, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, R. Bleck, C. Boning, A. Bozec, V. M. Canuto, C. Cassou, E. Chassignet, A. C. Coward, S. Danilov, N. Diansky, H. Drange, R. Farneti, E. Fernandez, **P. G. Fogli**, G. Forget, Y. Fujii, S. M. Griffies, A. Gusev, P. Heimbach, A. Howard, T. Jung, M. Kelley, W. G. Large, A. Leboissetier, J. Lu, G. Madec, S. J. Marsland, S. Masina, A. Navarra, A. J. G. Nurser, A. Pirani, A. Romanou, D. Salas y Melia, B. L. Samuels, M. Scheinert, D. Sidorenko, S. Sun, A.-M. Treguier, H. Tsujino, P. Uotila, S. Valcke, A. Voldoire, Q. Wang (2016): North Atlantic Simulations in Coordinated Ocean-ice Reference Experiments phase II (CORE-II). Part II: Inter-Annual to Decadal Variability. *Ocean Modell.*, 97, doi:[10.1016/j.ocemod.2015.11.007](https://doi.org/10.1016/j.ocemod.2015.11.007).
8. S. M. Downes, R. Farneti, P. Uotila, S. Marsland, S. M. Griffies, D. Bailey, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, C. Boning, A. Bozec, E. Chassignet, G. Danabasoglu, S. Danilov, N. Diansky, H. Drange, **P. G. Fogli**, A. Gusev, A. Howard, M. Kelley, W. G. Large, A. Leboissetier, M. Long, J. Lu, S. Masina, A. Mishra, A. Navarra, A. J. G. Nurser, L. Patara, B. L. Samuels, D. Sidorenko, H. Tsujino, S. G. Yeager, Q. Wang (2015): An assessment of Southern Ocean water masses and sea ice during 1988-2007 in a suite of interannual CORE-II simulations. *Ocean Modell.*, 94, doi:[10.1016/j.ocemod.2015.07.022](https://doi.org/10.1016/j.ocemod.2015.07.022).
9. R. Farneti, S. M. Downes, S. M. Griffies, S. J. Marsland, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, C. Boning, A. Bozec, V. M. Canuto, E. Chassignet, G. Danabasoglu, S. Danilov, N. Diansky, H. Drange, **P. G. Fogli**, A. Gusev, R. W. Hallberg, A. Howard, M. Ilıcak, T. Jung, M. Kelley, W. G. Large, A. Leboissetier, M. Long, J. Lu, S. Masina, A. Mishra, A. Navarra, A. J. G. Nurser, L. Patara, B. L. Samuels, D. Sidorenko, H. Tsujino, P. Uotila, Q. Wang, S. G. Yeager (2015): An assessment of Antarctic Circumpolar Current and Southern Ocean Meridional Overturning Circulation during 1958–2007 in a suite of interannual CORE-II simulations. *Ocean Modell.*, 93, doi:[10.1016/j.ocemod.2015.07.009](https://doi.org/10.1016/j.ocemod.2015.07.009).
10. M. D'Errico, C. Cagnazzo, **P. G. Fogli**, W. K. M. Lau, J. von Hardenberg, F. Fierli, A. Cherchi (2015): Indian Monsoon and the Elevated-Heat-Pump Mechanism in a Coupled Aerosol-Climate Model. *J. Geophys. Res.*, 120, doi:[10.1002/2015JD023346](https://doi.org/10.1002/2015JD023346).
11. Scoccimarro E., Villarini G., Vichi M., Zampieri M., **Fogli P. G.**, Bellucci A., Gualdi S. (2015): Projected Changes in Intense Precipitation over Europe at the Daily and Subdaily Time Scales, *J. Clim.*, 28, doi:[10.1175/JCLI-D-14-00779.1](https://doi.org/10.1175/JCLI-D-14-00779.1).
12. Davini, P., C. Cagnazzo, **P.G. Fogli**, E. Manzini, S. Gualdi and A. Navarra (2014): European blocking and Atlantic jet stream variability in the NCEP/NCAR reanalysis and the CMCC-CMS climate model. *Clim. Dyn.*, 43, doi:[10.1007/s00382-013-1873-y](https://doi.org/10.1007/s00382-013-1873-y).

13. Danabasoglu, G., S.G. Yeager, D. Bailey, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, C. Böning, A. Bozec, V.M. Canuto, C. Cassou, E. Chassignet, A.C. Coward, S. Danilov, N. Diansky, H. Drange, R. Farneti, E. Fernandez, **P.G. Fogli**, G. Forget, Y. Fujii, S.M. Griffies, A. Gusev, P. Heimbach, A. Howard, T. Jung, M. Kelley, W.G. Large, A. Leboissetier, J. Lu, G. Madec, S.J. Marsland, S. Masina, A. Navarra, A.J.G. Nurser, A. Pirani, D. Salas y Mélia, B.L. Samuels, M. Scheinert, D. Sidorenko, A.-M. Treguier, H. Tsujino, P. Uotila, S. Valcke, A. Voldoire, Q. Wang (2014): North Atlantic simulations in Coordinated Ocean-ice Reference Experiments phase II (CORE-II). Part I: Mean states, *Ocean Modell.*, 73, doi:[10.1016/j.ocemod.2013.10.005](https://doi.org/10.1016/j.ocemod.2013.10.005).
14. Cagnazzo, C., E. Manzini, **P.G. Fogli**, M. Vichi, P. Davini (2013): Role of stratospheric dynamics in the ozone-carbon connection in the Southern Hemisphere, *Clim. Dyn.*, 41, doi:[10.1007/s00382-013-1745-5](https://doi.org/10.1007/s00382-013-1745-5).
15. Huebener, H., M.G. Sanderson, I. Höschel, J. Körper, T.C. Johns, J.-F. Royer, E. Roeckner, E. Manzini, J.-L. Dufresne, O.H. Otterå, J. Tjiputra, D. Salas y Melia, M. Giorgetta, S. Denvil, **P.G. Fogli** (2013): Regional hydrological cycle changes in response to an ambitious mitigation scenario, *Clim. Change*, 120, doi: [10.1007/s10584-013-0829-x](https://doi.org/10.1007/s10584-013-0829-x).
16. Bellucci, A., S. Gualdi, S. Masina, A. Storto, E. Scoccimarro, C. Cagnazzo, **P.G. Fogli**, E. Manzini, A. Navarra (2013): Decadal climate predictions with a coupled OAGCM initialized with oceanic reanalyses, *Clim. Dyn.*, 40, doi:[10.1007/s00382-012-1468-z](https://doi.org/10.1007/s00382-012-1468-z).
17. Vichi, M., A. Navarra, **P.G. Fogli** (2012): Adjustment of the natural ocean carbon cycle to negative emission rates, *Clim. Change*, 118, doi:[10.1007/s10584-012-0677-0](https://doi.org/10.1007/s10584-012-0677-0).
18. Alessandri, A., **P.G. Fogli**, M. Vichi, N. Zeng (2012): Strengthening of the hydrological cycle in future scenarios: atmospheric energy and water balance perspective, *Earth Syst. Dynam.*, 3, doi:[10.5194/esd-3-199-2012](https://doi.org/10.5194/esd-3-199-2012).
19. Patara L., M. Vichi, S. Masina, **P.G. Fogli**, E. Manzini (2012): Global response to solar radiation absorbed by phytoplankton in a coupled climate model. *Clim. Dyn.*, 39, doi: [10.1007/s00382-012-1300-9](https://doi.org/10.1007/s00382-012-1300-9).
20. Manzini, E., C. Cagnazzo, **P. G. Fogli**, A. Bellucci, and W. Müller (2012): Stratosphere - Troposphere coupling at inter-decadal time scales: Implications for the North Atlantic Ocean. *Geophys. Res. Lett.*, doi:[10.1029/2011GL050771](https://doi.org/10.1029/2011GL050771).
21. Weare B., C. Cagnazzo, **P.G. Fogli**, E. Manzini, A. Navarra (2012): Madden-Julian Oscillation in a Climate Model with a Well-resolved Stratosphere. *J. Geophys. Res.*, 117, D1, doi:[10.1029/2011JD016247](https://doi.org/10.1029/2011JD016247).
22. T.C. Johns, J.-F. Royer, I. Höschel, H. Huebener, E. Roeckner, E. Manzini, W. May, J.-L. Dufresne, O.H. Otterå, D.P. van Vuuren, D. Salas y Melia, M.A. Giorgetta, S. Denvil, S. Yang, **P.G. Fogli**, J. Körper, J.F. Tjiputra, E. Stehfest, C.D. Hewitt (2011): Climate change under aggressive mitigation: The ENSEMBLES multi-model experiment. *Clim. Dyn.*, doi:[10.1007/s00382-011-1005-5](https://doi.org/10.1007/s00382-011-1005-5).
23. Scoccimarro E., S. Gualdi, A. Bellucci, A. Sanna , **P.G. Fogli**, E. Manzini, M. Vichi, P. Oddo, A. Navarra (2011): Effects of Tropical Cyclones on Ocean Heat Transport in a High Resolution Coupled General Circulation Model. *J. of Clim.*, doi:[10.1175/2011JCLI4104.1](https://doi.org/10.1175/2011JCLI4104.1)
24. Vichi M., E. Manzini, **P.G. Fogli**, A. Alessandri, L. Patara, E. Scoccimarro, S. Masina and A. Navarra (2011): Global and regional ocean carbon uptake and climate change: Sensitivity to an aggressive mitigation scenario. *Clim. Dyn.*, doi:[10.1007/s00382-011-1079-0](https://doi.org/10.1007/s00382-011-1079-0).

25. Manzini E., Matthes K., Blume C., Bodeker G., Cagnazzo C., Calvo N., Charlton-Perrez A., Douglass A., **Fogli P.G.**, Gray L., Kim J., Kodera K., Kunze M., Ortiz C.P., Randel B., Reichler T., Stenchikov G., Timmreck C., Toohey M and Yoden S. (2010): Natural Variability of Stratospheric Ozone. Chapter 8 in SPARC CCMVal (2010), SPARC Report on the Evaluation of Chemistry-Climate Models, V. Eyring, T. G. Shepherd, D. W. Waugh (Eds.), SPARC Report No. 5, WCRP-132, WMO/TD-No. 1526, <http://www.atmosp.physics.utoronto.ca/SPARC>.
26. Pinardi N., Zavatarelli M., Giacomelli L., Tonani M., Adani M., Basti A., Bianchi D., Donnini F., Farinelli L., **Fogli P.G.**, Liverani B., Lunghi S., Nencioli F., Olivieri L., Pavan M. (2002): Il Laboratorio Interdisciplinare ad indirizzo marino: studio di oceanografia e meteorologia della baia di Fetovaia, Isola d'Elba, QUASAM Quaderni di Scienze Ambientali, Vol. 1, pp. 93-105.

Technical reports:

1. E. Maisonnave, L. Coquart, U. Fladrich, **P.G. Fogli**, R. Hill, Ø. Seland, A. Voldoire (2016): IS-ENES model interface updates for compliance with new OASIS coupler, CERFACS Technical Report TR/CMGC/16/29506, 9 pp.
2. Sanna A., A. Borrelli, S. Materia, P. Athanasiadis, A. Bellucci, **P. G. Fogli**, E. Scoccimarro, S. Gualdi (2015): The new CMCC – Seasonal Prediction System. CMCC Research Paper RP0253, 13 pp.
3. **Fogli, P.G.** and D. Iovino (2014): CMCC-CESM-NEMO: toward the new CMCC Earth System Model. CMCC Research Paper RP0248, 19 pp.
4. **Fogli, P.G.**, E. Manzini, M. Vichi, A. Alessandri, L. Patara, S. Gualdi, E. Scoccimarro, S. Masina, and A. Navarra (2009): INGV-CMCC Carbon (ICC): A Carbon Cycle Earth System Model, CMCC Technical Report RP61, 31 pp.
5. Scoccimarro E., Gualdi S., **Fogli P. G.**, Manzini E., Grezio A. and Navarra A. (2007a): INGV-SXG: A Coupled Atmosphere Ocean Sea-Ice General Circulation Climate Model, CMCC Technical Report TR1, 66 pp.
6. Scoccimarro E., Gualdi S., Bellucci A., Grezio A., **Fogli P. G.**, Mancini E. and Navarra A. (2007b): The INGV-CMCC IPCC Scenario Simulations, CMCC Technical Report TR2, 20 pp.
7. Scoccimarro E., Gualdi S., Bellucci A., **Fogli P. G.**, Carril A. and Navarra A. (2007c): CMCC-SXF025: A High-Resolution Coupled Atmosphere Ocean General Circulation Climate Model, CMCC Technical Report TR3, 63 pp.
8. Carril A. F., R. Budich, J. Cole, G. De Martino, M. E. Demory, R. Doscher, **P. G. Fogli**, E. Guilyardi, U. Hansson, M. Kastowsky, E. Kjellstrom, J. Latour, C. Le Quere, E. Manzini, K. Maynard, S. Planton, P. van Velthoven and M. Vichi (2005): The PRISM Demonstration Runs. PRISM Report Series n°14, 174 pp.

Participation to workshops and conferences:

Oral and poster presentations to around 30 international conferences and workshops.

Research interests:

Numerical modeling of the climate system; Global coupled models and Earth system models development; Global carbon cycle modeling; Numerical methods

Skills and competences:

Social skills and competences:

Capability to work in a complex interdisciplinary scientific environment. Willingness to team-working and sharing of experiences and results.

Computer skills and competences:

More than 15 years of experience with a wide range of computer platforms, from personal workstations/laptops to leading edge HPC platforms (NEC SX vector multiprocessor serie, IBM Power serie, CRAY X serie, IBM iDataPlex serie). Experience with the most common operating systems (Windows, Mac OS, UNIX/Linux), with excellent knowledge of UNIX/Linux systems. Programming languages: excellent knowledge of FORTRAN (77/90/95/2003) and UNIX shell; good knowledge of C and Python; basics of Perl, awk, Intel x86 assembler. Development tools: UNIX make, GNU autoconf, CVS, subversion, Git; benchmarking and debugging. Parallel programming: MPI, OpenMP. Scientific analysis and visualization software: MATLAB, Python (numpy, scipy, matplotlib, basemap), Grid Analysis and Display System (GrADS), NCAR Command Language (NCL), netCDF Operator (NCO), Climate Data Operators (CDO). Other: LaTeX, HTML/CSS, office suites.

Languages:

Italian (native language); English (fluent)

Autorizzo il trattamento dei dati personali ai sensi del D. lgs. 196/03.

Bologna, July 2018



Pier Giuseppe Fogli