

PERSONAL INFORMATION

Dr Annalisa Cherchi



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Sex Female | Date of birth 13/07/1974 | Nationality Italian | Mother of Leonardo Alessandri (born on 23/04/2015)

ORCID: <https://orcid.org/0000-0002-0178-9264> h-index: 18 (Scopus), 20 (Google Scholar)

ASN 2018/2020: 02/C1, 04/A4 (validita' estesa fino al 2032)

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input type="checkbox"/> Full professor	<input checked="" type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

Apr 2020 - present

Senior scientist at National Research Council, Institute of Atmospheric Science and Climate, CNR-ISAC (Bologna, Italy)

www.isac.cnr.it

- Research activities on climate variability and climate change of the tropical regions (monsoons and interaction with modes of variability like IOD and ENSO);
- Research activities on climate variability and climate change over the Mediterranean regions
- Experiments and analysis with EC-Earth coupled climate model
- Research associate at Istituto Nazionale di Geofisica e Vulcanologia
- Convener of the session "Climate change in Mediterranean-type climate zones" @EGU since 2021
- Associate editor for International Journal of Climatology; Meteorological Applications; Frontiers Climate; Editor in Chief for Critical Insights in Climate Change

Jul 2006 – Jan 2019

Scientist (junior up to Jul 2010) at Fondazione Centro Euromediterraneo sui Cambiamenti Climatici, CMCC (Bologna, Italy)

www.cmcc.it

- Research activities on tropical climate variability and climate change, teleconnection, Mediterranean climate change, climate sensitivity to increased carbon cycle and past warm/cold states;
- PI for CMCC activities in EU projects (CLARIS-LPB, INDO-MARECLIM, BlueAction)
- Academic activities and seminars in the framework of the PhD on Science and Management of climate change (Ca' Foscari University)
- Head of Earth System modelling Unit (since January 2015)

Sept 2012 – Aug 2013

Visiting scientist at IPRC (University of Hawaii)

www.iprc.soest.hawaii.edu

- Working with Dr Annamalai on the relationship between the Indian summer monsoon and the summer climate over the Mediterranean (monsoon-desert) in CMIP5 models

Jul 2000 – Mar 2020

Technical collaboration for research (CTER) at Istituto Nazionale di Geofisica e Vulcanologia, INGV (permanent position since Sept 2003)

www.ingv.it

- System management of computing facilities in use in Bologna (including NEC and IBM HPC)
- Support to and independent research activities on tropical climate variability and change in the framework of EU projects (DYNAMITE, ENSEMBLES, MERSEA) – mostly up to 2006

- 2006-2019 activities dedicated to CMCC (see above)
- Contribution to the concept and draft of the MACMAP project (funds from the INGV department of environment), coordinated by Antonio Guarnieri (submitted in 2020)

Nov 1999 – May 2000

Research collaboration at IGM-CNR (Bologna) and Department of the National and Technical Services (Firenze)

- Management of parallel computers, usage of advanced software packages to analyse Tirreno sea dataset. Hardware and software management of the computer network for the project TIRRENO

Jan 1999 – Sept 1999

Research collaboration at IMGA-CNR (Bologna, Italy)

- Algorithms and visualization codes of a coupled model to study the climate variability

EDUCATION AND TRAINING

2004

PhD in Geophysics

Alma Mater Studiorum – Università di Bologna

- Thesis (in English) titled: “The Asian monsoon system and its teleconnections” Supervisors: Prof A. Navarra and Prof M. Bonafede

1998

Degree in Physics

Alma Mater Studiorum – Università di Bologna

- Thesis (in Italian) titled: “Modelli idealizzati della circolazione monsonica” Supervisor: Prof A. Navarra

PERSONAL SKILLS

Mother tongue(s)

Italian

Other language(s)

English (Proficient User), French (Basic Level)

Job-related experiences

My main expertise is on tropical climate variability in the Indo-Pacific region, dominated by the Asian summer monsoon. I contributed to monsoon studies covering a wide range of aspects, like the relationship with the Indian Ocean, the impact of increased horizontal resolution, the role of increased atmospheric carbon dioxide concentration, including monsoon predictability. I contributed to the C20C (Climate of the 20th century) CLIVAR framework for the study of the connection between the Asian summer monsoon and ENSO. I explored the relationship between the South Asian monsoon and the summer mean climate over the Mediterranean region in CMIP5 simulations (in collaboration with IPRC at Hawaii University). I have been involved in analysis related to decrease in sea-ice over the Arctic and associated linkages in the Northern Hemisphere during winter and summer. Other areas of research cover the study of the climate system and the processes associated with climatic states different from the present, as well as aspects of climate variability and extremes in South East South America. I have also expertise in computational global climate modelling and while at CMCC I coordinated the activities to generate the next generation of CMCC earth system model for the contribution to CMIP6 experiments. More recently I started to contribute to the models' development activity of the community model EC-Earth, as CNR-ISAC is part of the Consortium. I have contributed as Lead Author to the last IPCC AR6 Assessment for WGI (2018-2021). In 2022 I published with Susanna Corti an educational short book (in Italian) “CLIMA2050. La matematica e la fisica per il future del Sistema Terra”, edited by Zanichelli.

Other roles

Co-chair of the new WCRP LHA Global Precipitation experiment (GPEX) since January 2025 (as former member of the GPEX interim-SSG, since Jan 2024, and of the tiger team since 2022 toward its formation and establishment as LHA in late 2023).

Member of the Scientific Advisory Board of the International Foundation Big Data and Artificial

Intelligence for Human Development (IFAB) in Bologna (<https://www.ifabfoundation.org/it/>) since Nov 2023

Member of the CLIVAR Monsoon Panel (since 2022), and of the WG2 of the WCRP LHA on Explaining and Predicting Earth System Change (since 2022)

Member of the Scientific Committee of the “Seconda conferenza nazionale sulle previsioni meteorologiche e climatiche” (Bologna, 21-22 Giugno 2022)

Member of the Steering Committee of the “Global Monsoon Model Intercomparison Program (GMMIP)” within the framework of the next coupled models’ inter-comparison (CMIP6);

Member of the scientific committee of the AISAM2021 CN3 (<https://congresso.aisam.eu/>)

Abilitazione ASN2018: Astronomia, astrofisica, fisica della terra e dei pianeti (Fascia II, 29/03/2021-29/03/2030); Geofisica (Fascia II, 12/04/2021 – 12/04/2030)

Feb 2018 – Aug 2021: Lead Author for the IPCC AR6 WGI report (Chapter 8, “Water cycle changes”, contributions to Technical Summary and Summary for Policymakers).

Computer/Digital skills

Programming languages: Fortran77 e Fortran90.

Writing software: Latex, MS Word

Graphic & computing software: GrADS, Matlab, NCL

Operating systems and shell programming (sh, csh, e ksh):

- LINUX, including System Management experience on PC with Linux Redhat e Mandrake OS (November 1999 - May 2000);
- IRIX, including System Management experience Sylicon Graphics (O2, Indy e Indigo) workstations and on Origin2000 (multi-CPU) with attached archiving system (ATL/52 library driven by AMASS software) (November 1999 - December 2002);
- SOLARIS, including short experience of System Management on SUN (SparcStation10, SparcStation5, SparcStation20 and Ultra) workstations (November 1999 - May 2000);
- AIX, including System Management experience (2001 - 2005) on IBM RS/6000 SP with attached Control Workstation (RS/6000) and IBM RS/6000 H70 with Magstar 3494 attached;
- SUPER-UX, including experience of System Management (2001 - 2005) on NEC-SX4 supercomputer (16 CPUs).
- MacOS, workstation in use since 2006

Modelling: ECHAM4.6, ECHAM5, CAM4, CAM5 (atmospheric general circulation models); SINTEX, CMCC-CM2, CMCC-ESM2, EC-Earth3 (climate & Earth System Models)

ADDITIONAL INFORMATION

International peer-reviewed publications

1. Urdiales-Flores D, Zittis G, Hadjinicolaou P, **Cherchi A**, Alessandri A, Peleg N, Lelieveld J (2024) A global analysis of historical and future changes in Mediterranean climate-type regions. *Int J Climatol* 0: 1-14 <https://doi.org/10.1002/joc.8655>
2. Seager R, Wu Y, **Cherchi A**, Simpson IR, Osborn TJ, Kushnir Y, Lukovic J, Liu H, Nakamura J (2024) Recent and near-term future changes in impacts-relevant seasonal hydroclimate in the world's Mediterranean climate regions. *Int J Climatol* 44(11): 3792-3280 <https://doi.org/10.1002/joc.8551>
3. Zeng X, Alves L, Boucher MA, **Cherchi A**, DeMott C, Dimri AP, Gettelman A, Hanna E, Horinouchi T, Huang J, Lennard C, Leung LR, Luo Y, Thamman M, Palanisamy H, Pryor SC, Saint-Lu M, Sobolowski SP, Stammer D, Steiner J, Stevens B, Uhlenbrook, Wehner M, Zuidema P (2024) Global Precipitation Experiment – A new World Climate Research Programme Lighthouse Activity. *Bull Amer Meteor Soc* <https://doi.org/10.1175/BAMS-D-23-0242.1>
4. Ghosh R, Manzini E, Gao Y, Gastineau G, **Cherchi A**, Frankignoul C, Liang YC, Kwon YO, Suo L, Tyrllis E, Mecking JV, Tian T, Zhang Y, Matei D (2024) Observed winter Barents Kara Sea ice variations induce prominent sub-decadal variability and a multi-decadal trend in the Warm Arctic Cold Eurasia pattern. *Env Res Lett* 19 024018 <https://doi.org/10.1088/1748-9326/ad1cla>
5. Pivotti V, Anderson BT, **Cherchi A**, Bellucci A (2023) North Pacific trade wind precursors to ENSO in the CMIP6 HighResMIP multimodel ensemble. *Climate Dynamics* 60:2501-2516 <https://doi.org/10.1007/s00382-022-06449-0>
6. Gastineau G, Frankignoul C, Gao Y, Liang YC, Kwon YO, **Cherchi A**, Ghosh R, Manzini E, Matei D, Mecking J, Suo L, Tian T, Yang S, Zhang Y (2023) Forcing and impact of the Northern Hemisphere continental snow cover in 1979-2014. *The Cryosphere* 17 2157-2184 <https://doi.org/10.5194/tc-17-2157-2023>

7. Douville H, Allan RP, Arias PA, Betts RA, Caretta MA, **Cherchi A**, Mukherji, Raghavan K, Renwick J (2022) Water remains a blind spot in climate change policies. *PLOS Water* 1 (12) e0000058 <https://doi.org/10.1371/journal.pwat.0000058>
8. Lovato T, Peano D, Butenschon M, Materia S, Iovino D, Scoccimarro E, Fogli PG, **Cherchi A**, Bellucci A, Gualdi S, Masina S, Navarra A (2022) CMIP6 simulations with the CMCC Earth System Model (CMCC-ESM2). *JAMES* <https://doi.org/10.1029/2021MS002814>
9. Liang YC, Frankignoul C, Kwon YO, Gastineau G, Manzini E, Danabasoglu G, Suo L, Yeager S, Gao Y, Attema JJ, **Cherchi A**, Ghosh R, Matei D, Mecking JV, Tian T, Zhang Y (2021) Impacts of Arctic sea ice on cold season atmospheric variability and trends estimated from observations and a multimodel large ensemble. *J Clim* 34 8419-8443 <https://doi.org/10.1175/JCLI-D-20-0578.1>
10. Arias PA, Bellouin N, Coppola E, Jones RG, Krinner G, Marotzke J, Naik V, Palmer MD, Plattner GK, Rogelj J, Rojas M, Sillman J, Strovelmo T, Thorne PW, Trevisan B, Achuta Rao K, Adhikary B, Allan RP, Armour K, Bala G, Barimalala R, Berger S, Canadell JG, Cassou C, **Cherchi A**, Collins W, Collins WD, Connors SL, Corti S, Cruz F, Dentener FJ, Deroczynski C, Di Luca A, Diongue Niang A, Doblas-Reyes FJ, Dosio A, Douville H, Engelbrecht F, Eyring V, Fischer E, Forster P, Fox-Kemper B, Fuglestad JS, Fyfe JC, Gillet NP, Goldfarb L, Gorodetskaya I, Gutierrez JM, Hamdi R, Hawkins E, Hewitt HT, Hope P, Islam AS, Jones C, Kaufman DS, Kopp RE, Kosaka Y, Kossin J, Krakovska S, Lee J-Y, Li J, Mauritsen T, Maycock TK, Meinshausen M, Min S-K, Monteiro PMS, Ngo-Duc T, Otto F, Pinto I, Pirani A, Raghavan K, Ranasinghe R, Ruane A, Ruiz L, Salle JB, Samset BH, Sathyendranath S, Seneviratne SI, Sorrenson AA, Szopa S, Takayabu I, Treguer AM, van den Hurk B, Vautard R, von Schuckmann K, Zaehle S, Zhang X, Zickfeld K (2021) Technical Summary. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Masson-Delmotte V, Zhai P, Pirani A, Connors SL, Pean C, Berger S, Caud N, Chen Y, Goldfarb L, Gomis MI, Huang M, Leitzell K, Lonnoy E, Matthews JBR, Maycock TK, Waterfield T, Yelekci O, Yu R, Zhou B (eds). Cambridge University Press (In press)
11. Douville H, Raghavan K, Renwick J, Allan RP, Arias PA, Barlow M, Cerezo-Mota R, **Cherchi A**, Gan TY, Gergis J, Jiang D, Khan A, Pokam Mba W, Rosenfeld D, Tierney J, Zolina O (2021) Water cycle changes. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Masson-Delmotte V, Zhai P, Pirani A, Connors SL, Pean C, Berger S, Caud N, Chen Y, Goldfarb L, Gomis MI, Huang M, Leitzell K, Lonnoy E, Matthews JBR, Maycock TK, Waterfield T, Yelekci O, Yu R, Zhou B (eds). Cambridge University Press (In press)
12. IPCC, 2021: Annex IV: Modes of variability. Cassou C, **Cherchi A**, Kosaka Y (eds). In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Masson-Delmotte V, Zhai P, Pirani A, Connors SL, Pean C, Berger S, Caud N, Chen Y, Goldfarb L, Gomis MI, Huang M, Leitzell K, Lonnoy E, Matthews JBR, Maycock TK, Waterfield T, Yelekci O, Yu R, Zhou B (eds). Cambridge University Press (In press)
13. IPCC, 2021: Annex V: Monsoons. **Cherchi A**, Turner A (eds). In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Masson-Delmotte V, Zhai P, Pirani A, Connors SL, Pean C, Berger S, Caud N, Chen Y, Goldfarb L, Gomis MI, Huang M, Leitzell K, Lonnoy E, Matthews JBR, Maycock TK, Waterfield T, Yelekci O, Yu R, Zhou B (eds). Cambridge University Press (In press)
14. **Cherchi A**, Terray P, Ratna SB, Sankar S, Sooraj KP, Behera S (2021) Indian Ocean Dipole influence on Indian summer monsoon and ENSO: a review. Chapter 8 in *Indian summer monsoon variability (El Nino teleconnections and beyond)*, Chowdary JS, Parekh A, Gnanaseelan C (eds). Elsevier, ISBN: 978-0-12-822402-1 <https://doi.org/10.1016/B978-0-12-822402-1.00011-9>
15. Sooraj KP, Terray P, **Cherchi A** (2021) South Asian summer monsoon and subtropical deserts. Chapter 15 in *Indian summer monsoon variability (El Nino teleconnections and beyond)*, Chowdary JS, Parekh A, Gnanaseelan C (eds). Elsevier, ISBN: 978-0-12-822402-1 <https://doi.org/10.1016/B978-0-12-822402-1.00015-6>
16. Ratna SB, **Cherchi A**, Osborn TJ, Joshi M, Uppara U (2021) The extreme positive Indian Ocean dipole of 2019 and associated Indian summer monsoon rainfall response. *Geophys Res Lett* e2020GL091497 <https://doi.org/10.1029/2020GL091497>
17. Allan, RP, Barlow M, Byrne MP, **Cherchi A**, Douville H, Fowler HJ, Gan TY, Pendergrass A, Rosenfeld D, Swann ALS, Wilcox LJ, Zolina O (2020) Advances in understanding large-scale responses of the water cycle to climate change. *Ann of NY Acad Sci* <https://doi.org/10.1111/nyas.14337>
18. Barcikowska MJ, Kapnick SB, Krishnamurty L, Russo S, **Cherchi A**, Folland CK (2020) Changes in the future summer Mediterranean climate: contribution of teleconnections and local factors. *Earth Sys Dyn* 11: 161-181 <https://doi.org/10.5194/esd-11-161-2020>
19. Scoccimarro E, Gualdi S, Bellucci A, Peano D, **Cherchi A**, Vecchi GA, Navarra A (2020) The typhoon-induced drying of the Maritime Continent. *PNAS* www.pnas.org/cgi/doi/10.1073/pnas.1915364117

20. Liang Y-C, Kwon Y-O, Frankignoul C, Danabasoglu G, Yeager S, **Cherchi A**, Gao Y, Gastineau G, Ghosh R, Matei D, Mecking JV, Peano D, Suo L, Tian T (2020) Quantification of the Arctic sea-ice driven atmospheric circulation variability in coordinated large ensemble simulations. *Geophys Res Lett* 47: e2019GL085397 <https://doi.org/10.1029/2019GL085397>
21. Rahaman H, Srinivasu U, Panickal S, Durgadoo JV, Griffies SM, Ravichandran M, Bozec A, **Cherchi A**, Voldoire A, Sidorenko D, Chassignet EP, Danabasoglu G, Tsujino H, Getzlaff K, Ilıcak M, Bentsen M, Long MC, Fogli PG, Farneti R, Danilov S, Marsland SJ, Valcke S, Yeager SG, Wang Q (2019) An assessment of the Indian Ocean mean state and seasonal cycle in a suite of interannual CORE-II simulations. *Oc Modell* <https://doi.org/10.1016/j.ocemod.2019.101503>
22. **Cherchi A** (2019) Connecting AMOC changes. *Nat Clim Ch (News&Views)* <https://doi.org/10.1038/s41558-019-0590-x>
23. **Cherchi A**, Fogli PG, Lovato T, Peano D, Iovino D, Gualdi S, Masina S, Scoccimarro E, Materia S, Bellucci A, Navarra A (2019) Global mean climate and main patterns of variability in the CMCC-CM2 coupled model. *JAMES* <https://doi.org/10.1029/2018MS001369>
24. **Cherchi A**, Ratna SB, Masina S, Storto A, Yang C, Fratianni C, Simoncelli S, Pinardi N (2018) Evaluation of AMIP-type atmospheric fields as forcing for Mediterranean Sea and global ocean reanalyses. *Annals of Geophys* <https://doi.org/10.4401/ag-7793>
25. **Cherchi A**, Ambrizzi T, Behera S, Freitas ACV, Morioka Y, Zhou T (2018) The response of subtropical highs to climate change. *Current Climate Change Reports* <https://doi.org/10.1007/s40641-018-0114-1>
26. **Cherchi A**, Kucharski F, Colleoni F (2018) Remote SST forcing on Indian summer monsoon extreme years in AGCM experiments. *Int J Climatol* <https://doi.org/10.1002/joc.5360>
27. Abish B, **Cherchi A**, Ratna SB (2017) ENSO and the recent warming of the Indian Ocean. *Int J Climatol* <https://doi.org/10.1002/joc.5170>
28. Ratna SB, Ratnam JV, Behera SK, **Cherchi A**, Wang W, Yamagata T (2017) The unusual wet summer (July) of 2014 in Southern Europe. *Atm Res* 189: 61-68 <https://doi.org/10.1016/j.atmosres.2017.01.017>
29. **Cherchi A**, Annamalai H, Masina S, Navarra A, Alessandri A (2016) 21st century projected summer mean climate in the Mediterranean interpreted through the monsoon-desert mechanism. *Clim Dyn* <https://doi.org/10.1007/s00382-015-2968-4>
30. Lecci R, Masina S, **Cherchi A**, Barreiro M (2016) A coupled model study on the Atlantic Meridional Overturning Circulation under extreme atmospheric CO2 conditions. *Annals of Geophysics* <https://doi.org/10.4401/ag-6658>
31. Carril AF, Cavalcanti IFA, Menendez CG, Sorensson A, Lopez-Franca N, Rivera JA, Robledo F, Zaninelli PG, Ambrizzi T, Penalba OC, da Rocha RP, Sanchez E, Bettolli ML, Pessacq N, Renom M, Ruscica R, Solman S, Tencer B, Grimm AM, Rusticucci M, **Cherchi A**, Tedeschi R, Zamboni L (2016) Extreme events in La Plata basin: A retrospective analysis of what we have learned during CLARIS-LPB project. *Clim Res* doi: 10.3354/cr01374
32. Ratna SB, **Cherchi A**, Joseph PV, Behera SW, Abish B, Masina S (2016) Moisture variability over the Indo-Pacific region and its influence on the Indian summer monsoon rainfall. *Climate Dynamics* 46(3) 949-965 <https://doi.org/10.1007/s00382-015-2624-z>
33. D'Errico M, Cagnazzo C, Fogli PG, Lau WKM, von Hardenberg J, Fierli F, **Cherchi A** (2015) Indian monsoon and the elevated-heat-pump mechanism in a coupled aerosol-climate model. *J Geophys Res Atm* <https://doi.org/10.1002/2015JD023346>
34. Colleoni F, **Cherchi A**, Masina S, Brierley C (2015) Impact of global SST gradients on the Mediterranean runoff changes across the Plio-Pleistocene transition. *Paleoceanography* 30(6) 751-767 <https://doi.org/10.1002/2015PA002780>
35. Cavalcanti IFA, Carril AF, Penalba OC, Grimm AM, Menendez CG, Sanchez E, **Cherchi A**, Sorensson A, Robledo F, Rivera J, Pantano V, Bettolli LM, Zaninelli P, Zamboni L, Tedeschi RG, Dominguez M, Ruscica R, Flach R (2015) Precipitation extremes over La Plata Basin – Review and new results from observations and climate simulations. *J. of Hydrology* <https://doi.org/10.1016/j.jhydrol.2015.01.028>
36. Alessandri A, Borrelli A, **Cherchi A**, Materia S, Navarra A, Lee JY, Wang B (2015) Prediction of Indian summer monsoon onset using dynamical sub-seasonal forecasts: effects of realistic initialization of the atmosphere. *Mon Wea Rev* <https://doi.org/10.1175/MWR5D514500187.1>
37. Alessandri A, De Felice M, Zeng N, Mariotti A, Pan Y, **Cherchi A**, Lee JY, Wang B, Ha KJ, Ruti P, Artale V (2014) Robust assessment of the expansion and retreat of Mediterranean climate in the 21st century. *Sci Rep* 4: 7211 <https://doi.org/10.1038/srep07211>
38. **Cherchi A**, Carril AF, Menendez CG, Zamboni L (2014) La Plata basin precipitation variability in spring: role of remote SST forcing as simulated by GCM experiments. *Clim Dyn* 42: 219-236 <https://doi.org/10.1007/s00382-013-1768-y>
39. **Cherchi A**, Annamalai H, Masina S, Navarra A (2014) South Asian summer monsoon and the eastern Mediterranean climate: the monsoon-desert mechanism in CMIP5 simulations. *J Clim* 27: 6877-6903 <https://doi.org/10.1175/JCLI-D-13-00530.1>

40. Colleoni F, Masina S, **Cherchi A**, Iovino D (2014) Impact of orbital parameters and greenhouse gas on the climate of MIS7 and MIS5 glacial inception. *J Clim* 27: 8918-8933 <https://doi.org/10.1175/JCLI-D-13-00754.1>
41. Colleoni F, Masina S, **Cherchi A**, Navarra A, Ritz C, Peyaud V, Otto-Bliesner B (2014) Modeling Northern Hemisphere ice-sheet distribution during MIS5 and MIS7 glacial inception. *Clim Past* 10: 269-291 <https://doi.org/10.5194/cp-10-269-2014>
42. **Cherchi A**, Navarra A (2013) Influence of ENSO and of the Indian Ocean Dipole on the Indian summer monsoon variability. *Clim Dyn* 41: 81-103 <https://doi.org/10.1007/s00382-012-1602-y>
43. **Cherchi A**, Masina S, Navarra A (2012) Tropical Pacific-North Pacific teleconnection in a coupled GCM: remote and local effects. *Int J Clim* 32: 1640-1653 <https://doi.org/10.1002/joc.2379>
44. Miyakoda K, **Cherchi A**, Navarra A, Masina S, Ploshay J (2012) ENSO and its effects on the atmospheric heating processes. *J Meteor Soc Jpn* 90: 35-57 <https://doi.org/10.1002/jmsi.2012-103>
45. Anderson B, Knight JR, Ringer MA, Yoon JH, **Cherchi A** (2012) Testing for the possible influence of unknown climate forcings upon global temperature increases from 1950 to 2000. *J Clim* 25: 7163-7172 <https://doi.org/10.1175/JCLI-D-11-00645.1>
46. Barreiro M, **Cherchi A**, Masina S (2011) Climate sensitivity to changes in ocean heat transport. *J Clim* 24: 5015-5030 <https://doi.org/10.1175/JCLI-D-10-05029.1>
47. **Cherchi A**, Alessandri A, Masina S, Navarra A (2011) Effects of increased CO2 levels on monsoons. *Clim Dyn* 37: 83-101 <https://doi.org/10.1007/s00382-010-0801-7>
48. Anderson BT, Knight JR, Ringer MA, Deser C, Phillips AS, Yoon JH, **Cherchi A** (2010) Climate forcings and climate sensitivities diagnosed from atmospheric global circulation models. *Clim Dyn* 35: 1461-1475 <https://doi.org/10.1007/s00382-010-0798-y>
49. Alessandri A, Borrelli A, Masina S, **Cherchi A**, Gualdi S, Navarra A, Di Pietro P, Carril AF (2010) The INGV-CMCC seasonal prediction system: improved ocean initial conditions. *Mon Wea Rev* 138: 2930-2952 <https://doi.org/10.1175/2010MWR3178.1>
50. Zhou T, Wu B, Scaife AA, Bronnimann S, **Cherchi A**, Fereday D, Fischer AM, Folland CK, Jin KE, Kinter J, Knight JR, Kucharski F, Kusunoki S, Lau NC, Li L, Nath MJ, Nakaegawa T, Navarra A, Pegion P, Rozanov E, Schubert S, Sporyshev P, Voldoire A, Wen X, Yoon JH, Zeng N (2009) The CLIVAR C20C project: which components of the Asian-Australian monsoon circulation variations are forced and reproducible? *Clim Dyn* 33: 1051-1068 <https://doi.org/10.1007/s00382-008-0501-8>
51. Carril AF, Gualdi S, Cherchi A, Navarra A (2008) Heatwaves in Europe: areas of homogeneous variability and links with the regional to large-scale atmospheric and SSTs anomalies. *Clim Dyn* 30: 77-98 <https://doi.org/10.1007/s00382-007-0274-5>
52. **Cherchi A**, Gualdi S, Behera S, Luo JJ, Masson S, Yamagata T, Navarra A (2007) The influence of tropical Indian Ocean SST on the Indian summer monsoon. *J Clim* 20: 3083-3105 <https://doi.org/10.1175/JCLI4161.1>
53. **Cherchi A**, Navarra A (2007) Sensitivity of the Asian summer monsoon to the horizontal resolution: differences between AMIP-type and coupled model experiments. *Clim Dyn* 28: 273-290 <https://doi.org/10.1007/s00382-006-0183-z>
54. **Cherchi A**, Navarra A (2003) Reproducibility and predictability of the Asian summer monsoon in the ECHAM4-GCM. *Clim Dyn* 20: 365-379 <https://doi.org/10.1007/s00382-002-0280-6>

Relevant projects

- PI for CNR-ISAC of project "Tornatura" [2024-2026]. Italian funds "Fondo per la Repubblica Digitale, CRESCERA!, AI for Made in Italy"
- Participant for CNR-ISAC at Horizon EU Project OptimESM (Optimal High Resolution Earth System Models for exploring future climate changes) [2023-2027].
- Participant for CNR-ISAC at PNRR CN HPC spoke 4 [2022-2025].
- PI for CNR-ISAC of ECMWF Special Project SPITCHER (Investigations of climate change in post-CMIP6 EC-Earth3 simulations over the Mediterranean climate regions). PI, 2023-2025 (HPC resources granted, start date 01 Jan 2023)
- PI for CNR-ISAC of ECMWF Special Project SPITCHER (Effects of aerosols reduction on the Asian summer monsoon prediction skill: the case of summer 2020 with COVID-19 confinements). PI, 2022-2024 (HPC resources granted, start date 01 Jan 2022)
- Participant for CNR-ISAC at Horizon 2020 Collaborative-Project CONFESS (Consistent representation of temporal variations of boundary forcings in re-analyses and seasonal forecasts) [2020-2023].
- PI for CMCC of the H2020 project BlueAction (Arctic impact on weather and climate) [2016-2021]
- PI for CMCC of the H2020 project INDO-MARECLIM (Indo-European research facilities for studies in marine ecosystem and climate in India) [2012-2015]
- PI for CMCC of the FP7 project CLARIS-LPB (A Europe-South America network for climate change assessment and impact studies in La Plata basin) [2008-2012]

Teaching

Lecturing (PhD): Courses within Science and Management of Climate Change (SGCC) PhD program at Università di Venezia, Ca' Foscari: "General circulation models: atmosphere" (2013) and "Introduction to the atmospheric sciences" (2008-2011). **Co-advisor of bachelor theses:** Zappa G. (2007); Cadau M. (2019) **Co-advisor of PhD theses:** Lecci R (2012), Pivotti V (2022), Dal Monte T (ongoing). **Supervisor of postdoctoral fellows:** within CLARIS-LPB and INDO-MARECLIM EU projects, Stefano Materia (2009; 2014-2015); Laura Zamboni (2009-2010);

Satyaban Bischoy Ratna (2013-2014); Miriam D'Errico (2014-2015)

Editorial & reviewer activity

Reviewer since 2004 for many peer-reviewed journals including Clim Dyn; ERL; GRL; Int J Climatol; J Clim; Nature. **Associate Editor** for Annals of Geophysics (March 2013 – March 2024); for Meteorological Applications (March 2019 – present); for International Journal of Climatology (March 2019 – present); for Frontiers in Climate, section Predictions and projections (December 2020 – present). Editor in Chief of the new journal "Critical Insights in Climate Change" (February 2024)

International conferences (last 10 years)

2024 April 14-19, poster @EGU2024 "Mediterranean climate regions in CMIP6 experiments: assessment of future changes and associated uncertainties", session CL4.12
2024 January 28th – February 1st, talk @AMS2024 (online) "On the role of external atmospheric forcing for the seasonal prediction of the Asian summer monsoons", session "Seasonal-to-decadal Earth System Prediction"
2023 April 23-28, talk @EGU2023 "A case study to investigate the role of aerosols reduction on the East Asian summer monsoon seasonal predictions", session CL5.3
2022 August 01- 05, virtual talk (invited) @AOGS 2022 "Effects of aerosols reduction on the Asian summer monsoon seasonal prediction: the case of summer 2020", session AS23
2022 July 26th invited lecture @ICTP 3rd summer school on Theory, Mechanisms and Hierarchical Modelling of Climate Dynamics: Tropical oceans, ENSO and their teleconnections on "A review of the influence of the Indian Ocean dipole on the Indian summer monsoon and ENSO"
2022 May Talk@EGU2022 "Effects of aerosols reduction on the Asian summer monsoon seasonal prediction: the case of summer 2020", session CL5.3.2
2021 Apr 19-30 vpico @VEGU2021 "On the relationship between Indian Ocean Dipole, Indian summer monsoon and ENSO, session OS1.5
2020 May 4-8 chat @EGU "Internal variability of the Arctic Oscillation and its projections" session CL4.15
2018 Apr 19th Talk (invited) @Workshop on the Northern Annular Mode "The role of the Tropics", IMAU, Utrecht (The Netherlands);
2017 Oct 17-20 Talk @Numerical modelling, predictability and data assimilation in weather ocean and climate: A symposium honoring the legacy of Anna Trevisan "The South Asian monsoon and the Mediterranean summer: Extreme years and onset", CNR, Bologna (Italy); **Dec 11-15** Poster @AGU Fall Meeting "Arctic sea-ice and patterns of the Northern Hemisphere atmospheric circulation", New Orleans (US)
2016 Jun 13-17 Talk (invited) @ICTP-IITM-COLA Targeted Training Activity (TTA) Towards improved monsoon simulation "The South Asian monsoon and the Mediterranean: a multi-model analysis" Trieste (Italy); **Jun 07-10** Talks @IWMO "Assessment of atmospheric re-analyses and AMIP experiments to force global and regional ocean re-analyses" and "Issues of the Indian Ocean warming in atmospheric and oceanic global re-analyses" Bologna (Italy)
2015 Mar 16-18 Talk @CMCC-JAMSTEC symposium on predictability and applicability of climate variations and change "Predictability and teleconnections of South Asian summer monsoon and Indian Ocean: Progresses at CMCC in the framework of the INDO-MARECLIM project" Bologna (Italy)
2014 27 Apr-02 May Talk @EGU "South Asian summer monsoon and the eastern Mediterranean climate: the "monsoon-desert mechanism" in CMIP5 simulations" Wien (Austria); **Sep 29-30** Talk @SISC "Linking South Asian summer monsoon and eastern Mediterranean climate in CMIP5 simulations: performance and 21st century projections" Venice (Italy)
2013 28Oct-01Nov Poster @IWM-V (WMO Fifth International Workshop on Monsoons) "South Asian summer monsoon and eastern Mediterranean climate: the monsoon-desert mechanisms in CMIP5 coupled models", Macao, China
2012 21-25 Feb Talk @OCHAMP "Influence of ENSO and the Indian Ocean Dipole on the potential predictability of the Indian summer monsoon", Pune, India

Organization of scientific meetings, schools and sessions in international conferences

24-27 Apr 2023 EGU2023 (hybrid meeting) – co-convenor of the session CL4.9 "Mediterranean climate regions of the world: climate change, variability and extremes; impacts and adaptation"
01-05 Aug 2022 AOGS 2022 (Virtual meeting) - Convenor of the session "AS29: Processes and Teleconnections of Tropical Water Cycle Variability: Past, Present and Future". Co-conveners: Prof Pang-chi Hsu, Dr Swapna P. (scheduled)
23-27 May 2022 EGU2022 (Hybrid meeting) – Convenor of the session CL3.1.4 "Climate change and other drivers of environmental change in Mediterranean-type and other climate regions, regional seas and coastal zones". Co-conveners: M. Reckermann, U. Daewel, B. Ekberzade, R. Seager, M. Meier, H. Filipsson, A. Alessandri (scheduled)
23-27 January 2022 AMS2022 (Virtual meeting) – Organizer of session 13-16D "Water Cycle in a Warmer World through Process Understanding and Climate and Hydrological Modeling". Co-organizer: P. Arias, M. Barlow, A. Jenney (chair and convenor).

19-30 April 2021 vEGU2021 (virtual meeting) Convener of session CL3.1.4 "Climate change in Mediterranean climate-type zones". Co-conveners: A. Alessandri, A. Mariotti, J. Renwick (scheduled on Apr 30th 09:00-09:45, 11 presentations, about 30 participants)

11-13 Nov 2013 Co-organizer of INDO-MARECLIM WORKSHOP II on "Monsoon and ocean variability, climate change and sea-level variations", Kochi, India (24 participants)

02-07 Nov 2013 Co-organizer of INDO-MARECLIM winter school on "Climate change and variability, marine ecosystems and coastal zone management", Kochi, India (30 participants)

22-23 Nov 2012 Co-organizer of the CMCC-LOCEAN workshop on "A 2-days brainstorming on the atmosphere-NEMO coupling and its applications", CMCC, Bologna, Italy (16 participants)

05-09 Nov 2012 Co-convenor of the session "Intra-seasonal variability of Asian summer monsoon" for 11th Biennial Conference of Pan Ocean Remote Sensing Conference (PORSEC)-2012, Kochi, Kerala, India (13 participants)

Other invited
(talks/seminars/lectures) &
dissemination

Cherchi A "Future of monsoons in a changing climate – a global perspective" Joint WCRP/WWRP Webinar Series, 13rd September 2023 (online)

Cherchi A: "A review of the influence of the Indian Ocean Dipole on the Indian summer monsoon and ENSO" 3rd Summer School on Theory, Mechanisms and Hierarchical Modelling of Climate Dynamics: Tropical Oceans, ENSO and their teleconnections July 2022 @ICTP (online)

Cherchi A: "Role of Indian Ocean in ENSO, Indian summer monsoon and related teleconnections" 16 Sept 2020 Società Italiana di Fisica (Annual conference, online)

Cherchi A: "The South Asian monsoon and the Mediterranean: a multi-model analysis" (invited seminar) University of Reading, Department of Meteorology, 27 February 2017

Cherchi A: "The South Asian monsoon and the Mediterranean: a multi-model analysis" (invited lecture) ICTP-IITM-COLA Targeted Training Activity (TTA): Towards improved monsoon simulations, 13-17 June 2016 Trieste (Italy)

Cherchi A: "Atmospheric and coupled models for South Asian summer monsoon studies: Methods and performances" (invited seminar) Department of Physics and Astronomy, Bologna University, 05 May 2016 Bologna

Cherchi A: "Indian Ocean, Indian summer monsoon and Teleconnections" (invited talk) INDO-MARECLIM workshop on "Monsoon and ocean variability, climate change and sea-level variations", 11-13 November 2013, Kochi (India)

Cherchi A: "Coupled and atmospheric GCMs: tools for Indian monsoon studies" (invited lecture) INDO-MARECLIM Winter School on "Climate change and variability, marine ecosystems and coastal zone management", 2-7 November 2013, Kochi (India)

Cherchi A: "AGCM and CGCM for Indian summer monsoon studies: Methods and performances" (invited seminar) PhD on Science and Management of Climate Change, Ca' Foscari University, 14 November 2012, Bologna

Cherchi A: "Can current climate models simulate different climates?" (invited seminar) PhD on Science and Management of Climate Change, Ca' Foscari University, 20 November 2012, Bologna

Cherchi A: "Climate variability and extremes in La Plata Basin: Results from EU-South America cooperation (CLARIS-LPB project)" (invited seminar) PhD on Science and Management of Climate Change, Ca' Foscari University, 28 November 2012, Bologna

Cherchi A: "Impact of increased CO2 levels on simulated tropical climate" (invited seminar) Institute of Atmospheric Physics 23 October 2008 Beijing (China)

Science communication
events (some of them in Italian)

12 Febbraio 2010 – "Il clima che cambia" Lezione presso Liceo Scientifico Banzi (Lecce)

14 Novembre 2012 – "AGCM and CGCM for Indian summer monsoon studies: Methods and performances" Seminario nell'ambito del dottorato in Scienza e Gestione dei Cambiamenti Climatici dell'Università Ca' Foscari (svolto a Bologna per gli studenti di dottorato)

20 Novembre 2012 – "Can current climate models simulate different climates?" Seminario nell'ambito del dottorato in Scienza e Gestione dei Cambiamenti Climatici dell'Università Ca' Foscari (svolto a Bologna per gli studenti di dottorato)

28 Novembre 2012 – "Climate variability and extremes in La Plata Basin: Results from EU-South America cooperation" Seminario nell'ambito del dottorato in Scienza e Gestione dei Cambiamenti Climatici dell'Università Ca' Foscari (svolto a Bologna per gli studenti di dottorato)

24 Settembre 2019 – "Cambiamenti climatici e riscaldamento globale: aspetti generali e possibili cause" – Lezione/seminario presso DIARC Università Federico II a Napoli nell'ambito dell'evento "... aspettando la notte 2019" (Notte Europea dei Ricercatori)

Contributi al BLOG INGVAmbiente (<https://ingvambiente.com/>): 9 Aprile 2019 "Cambiamenti climatici e riscaldamento globale" <https://ingvambiente.com/2019/04/09/cambiamenti-climatici-e-riscaldamento-globale/>;

25 Giugno 2019 "L'Artico ed il riscaldamento globale" <https://ingvambiente.com/2019/06/25/lamplificazione-polare/>; 1

2 Novembre 2019 "Ciclo idrologico e riscaldamento globale" <https://ingvambiente.com/2019/11/12/ciclo-idrologico-e-riscaldamento-globale/>

IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: the physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte V, P Zhai, A Pirani, SL Connors, C Pean, S Berger, N Caud, Y Chen, L Goldfarb, M Gomis, M Huang, K Leitzell, E Lonnoy, JBR Matthews, TK Maycock, T Waterfield, O Yelekci, R Yu, B Zhou (eds)]. In press

27 Ottobre 2021 – "What does the last IPCC Assessment report tell us?" Seminario (condiviso con Dr Susanna Corti e Dr Sandro Fuzzi) ECOMONDO – stand della regione Emilia Romagna (Rimini);

28 Ottobre 2021 – "Cosa dice la scienza sui cambiamenti climatici (un'esperienza diretta nella stesura dell'ultimo rapporto IPCC" Seminario (su invito) per la giornata "Il climate change come problema scientifico" organizzato presso il Dipartimento di Fisica dell'Università Sapienza di Roma.

11 Novembre 2021 – "Cambiamenti climatici e siccità: cosa sappiamo e cosa dobbiamo aspettarci per il futuro" Lezione/seminario (online) per il Progetto Formazione Continua dell'Università di Padova

04 Marzo 2022 – "Cosa sono i cambiamenti climatici, come (e perché) si studiano" Lezione Online per le scuole nell'ambito del progetto Innovation Lab (<https://www.artigitale.it/InnovationLab.pdf>)

08 Aprile 2022 – "Modellistica numerica e scienza del clima" seminario presso il dipartimento di Fisica ed Astronomia (DIFA) dell'Università di Bologna rivolto agli studenti di master

25 Ottobre 2022 – "Clima 2050: La Matematica e la Fisica per il futuro del sistema Terra" Conferenza (condivisa con Dr Susanna Corti) nell'ambito del Festival della Scienza di Genova - <https://www.festivalscienza.it/site/home/programma-2022/eventi-in-presenza/clima-2050.html>

03 Novembre 2022 – "Cambia il clima?" intervento su invito in apertura di 9 Congresso Nazionale AMIETIP – Le voci del cambiamento c/o Area della Ricerca di Bologna - <https://www.momedaeventi.com/IT/eventi.xhtml/evento/9090-9-congresso-nazionale-amietip-3-novembre-2022>

Dicembre 2022 – "CLIMA 2050 – La matematica e la fisica per il futuro del sistema Terra" A. Cherchi, S. Corti Zanichelli (Chiavi di Lettura) <https://www.zanichelli.it/ricerca/prodotti/clima-2050> – Libro di divulgazione scientifica scritto a 4 mani adatto alla lettura di studenti delle scuole superiori ed università.

Date, 07/02/2025

Signature

