Francisco J. Doblas-Reyes

Curriculum Vitae

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Brief Curriculum Vitae

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E-mail: *private* f.doblasreyes@googlemail.com, *professional* francisco.doblas-reyes@bsc.es
Place and date of birth: Madrid, 7th June 1968
Nationality: Spanish
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Profile

Francisco J. Doblas-Reyes is research professor of the Institució Catalana de Recerca i Estudis Avançats (ICREA), the most prestigious Catalan institution employing senior scientists in all research fields. He develops his research activity as director of the Earth Sciences Department of the Barcelona Supercomputing Center since November 2014. He took up this position after leading the Climate Forecasting Unit of the Institut Català de Ciències del Clima (IC3) from 2010 to 2015, also in Barcelona.
Prof Doblas-Reyes has a long research experience in the understanding, simulation and prediction of climate variability and change and started working on climate services research ten years ago. He has participated and coordinated several international research projects and initiatives related to his research interests. He is currently the coordinator of two collaborative European projects and leads several national projects and research contracts. He is the author of more than 200 peer-review journal articles and has a long record of obtaining competitive computing and financial resources to support this research. He is member of several international panels. He is the direct supervisor of four senior scientists, six postdocs, five senior engineers and two junior engineers, and regularly works with a large variety of department members,
He was coordinating lead author of the most recent Assessment Report of the Intergovernmental Panel on Climate Change, a lead author in the Fifth Assessment Report and has been heavily involved in the design of both technical and scientific aspects of the Sixth Coupled Model Intercomparison Project.

Education

- PhD in Physics with honours at the Universidad Complutense of Madrid (Spain). Thesis entitled “Atmospheric blocking: GCM simulation and associated precipitation patterns” (in Spanish). Date of dissertation: 22nd May 1996.
- Post-graduate courses at the Universidad Complutense of Madrid from October 1992 to October 1996, and at Météo-France in September-October 1994.
- MSc degree in Physics at the Universidad Complutense of Madrid (Spain), June 1991.

Professional Experience and Employment History

- Since November 2014, ICREA research professor at the Barcelona Supercomputing Center (BSC, Barcelona, Spain) as director of the Earth Sciences Department (https://www.bsc.es/discover-bsc/organisation/scientific-structure/earth-sciences).
- From December 2009 to November 2015, ICREA research professor at the Institut Català de Ciències del Clima (IC3, Barcelona, Spain) as head of the Climate Forecasting Unit.
- From March 2000 to November 2009 at the European Centre for Medium-Range Weather Forecasts (ECMWF, Reading, UK), as research scientist.
- Visiting scientist at CINECA (Bologna, Italy) in March 2000.
- From February 1999 to February 2000 at the Centro de Astrobiología, Instituto Nacional de Técnicas Aeroespaciales (Madrid, Spain) as research assistant.
- Visiting scientist at the Institute of Atmospheric Physics (Academy of Sciences, Prague, Czech Republic) in July and August 1997.
- From January 1997 to January 1999 at CNRM (Météo-France, Toulouse, France) as research assistant.
- Visiting scientist at the CNRM (Météo-France, Toulouse, France) in September-November 1994.
- Visiting scientist at the Instituto Meteorológico Nacional (Asunción, Paraguay) in August 1994.
- From October 1992 to September 1996 at the Departamento de Física de la Tierra, Astronomía y

Astrofísica II (Universidad Complutense, Madrid, Spain) as PhD student.

Managerial Experience

- Since November 2014 director of the Earth Sciences Department of the Barcelona Supercomputing Center (BSC, Barcelona, Spain, https://www.bsc.es/discover-bsc/organisation/scientific-structure/earth-sciences): took the leadership of the department to design a broader set of objectives, set new working principles promoting collaborative work, long-term documentation, structured training, reproducibility of the research and stability of the positions, establish a departmental organisation that rationalises resources, find the necessary financial and computing resources (the Center has little core resources), position the new research in the international scene and grow its human resources from 20 to the current 130 people.
- From December 2009 to November 2015 head of the Climate Forecasting Unit at the Institut Català de Ciències del Clima (IC3, Barcelona, Spain): created a group of more than 20 people (scientists, engineers, project manager and students) from scratch working on climate prediction and its applications, which was a novelty in Spain, almost completely funded from competitive resources and led it to a well-known international position in record time.
- PhD supervisor of Caio Coelho (granted in 2006), Danila Volpi (2014), Luis Rodrigues (2016), Verónica Torralba (2019), Oriol Tintó (2019), Llorenç Lledó (2020), Josep Cos and Balakrishnan Solaraju Murali.

Membership in Committees and Panels

- Member of the Destination Earth Strategic Advisory Board since 2022.
- Member of Community Earth System Model Advisory Board (NCAR, Boulder, USA) since 2020.
- Member of the Science Advisory Group of the APEC Climate Center (APCC, Busan, South Korea) since 2020.
- Member of the Standing Committee on Data Processing for Applied Earth System Modelling and Prediction and Projection (SC-ESMP) of the World Meteorological Organisation (WMO) since 2020.
- Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC), coordinating lead author 2018-2021.
- Modelling Advisory Council (WMAC) of the World Climate Research Programme (WCRP), member since 2012-2020, co-chair since 2018 (http://www.wcrp-climate.org/WMAC.shtml).
- CLIVAR's Decadal Climate Variability and Predictability panel, member 2015-2020.
- Scientific Committee of the Indian Institute of Tropical Meteorology (IITM, Pune, India), since 2015.
- Working Group on Seasonal-to-Interannual Prediction (WGSIP) of the World Climate Research Programme (WCRP), member 2011-2017, co-chair from 2012-2017 (http://www.wcrp-climate.org/index.php/wgsip-overview).
- Decadal Climate Prediction Panel (DCPP) of the WCRP, member 2012-2019 (http://www.wcrp-climate.org/decadal/cmip5.shtml).
- European Network for Earth System Modelling (ENES) High-Performance Computing Task Force, member since 2012 (https://verc.enes.org/ISENES2/project/na1-wp2-enes-strategy).
- Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC), lead author 2010-2013.

Selected Peer-Reviewed Publications (out of 215)

1. Pulkkinen, K., S. Undorf, F. Bender, P. Wikman-Svahn, F.J. Doblas-Reyes, C. Flynn, G.C. Hegerl, A. Jönsson, G.-K. Leung, J. Roussos, T.G. Shepherd and E. Thompson (2022). The value of values in climate science. *Nature Climate Change*, **12**, 4-6, doi:10.1038/s41558-021-01238-9.
2. Doblas-Reyes, F.J., A.A. Sörensson, M. Almazroui, A. Dosio, W.J. Gutowski, R. Haarsma, R. Hamdi, B. Hewitson, W.-T. Kwon, B.L. Lamptey, D. Maraun, T.S. Stephenson, I. Takayabu, L. Terray, A. Turner and Z. Zuo (2021). Linking global to regional climate change. *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, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1363–1512*, doi:10.1017/9781009157896.012.

3. Smith, D.M., A.A. Scaife, R. Eade, P. Athanasiadis, A. Bellucci, I. Bethke, R. Bilbao, L.F. Borchert, L.-P. Caron, F. Counillon, G. Danabasoglu, T. Delworth, F.J. Doblas-Reyes, N.J. Dunstone, V. Estella-Perez, S. Flavoni, L. Hermanson, N. Keenlyside, V. Kharin, M. Kimoto, W.J. Merryfield, J. Mignot, T. Mochizuki, K. Modali, P.-A. Monerie, W.A. Müller, D. Nicolí, P. Ortega, K. Pankatz, H. Pohlmann, J. Robson, P. Ruggieri, R. Sospedra-Alfonso, D. Swingedouw, Y. Wang, S. Wild, S. Yeager, X. Yang and L. Zhang (2020). North Atlantic climate far more predictable than models imply. *Nature*, **583**, 796-800, doi:10.1038/s41586-020-2525-0.
4. Bellprat, O., V. Guemas, F.J. Doblas-Reyes and M.G. Donat (2019). Towards reliable extreme weather and climate event attribution. *Nature Communications*, **10**, 1732, doi:10.1038/s41467-019-09729-2.
5. Kushnir, Y., A.A. Scaife, R. Arritt, G. Balsamo, G. Boer, F.J. Doblas-Reyes, E. Hawkins, M. Kimoto, R. Kumar Kolli, A. Kumar, D. Matei, K. Matthes, W.A. Müller, T. O'Kane, J. Perlwitz, S. Power, M. Raphael, A. Shimpo, D. Smith, M. Tuma and B. Wu (2019). Towards operational predictions of the near-term climate. *Nature Climate Change*, **9**, 94-101, doi:10.1038/s41558-018-0359-7.
6. Turco, M., S. Jerez, F.J. Doblas-Reyes, A. AghaKouchak, M. Carmen Llasat and A. Provenzale (2018). Skilful forecasting of global fire activity using seasonal climate predictions. *Nature Communications*, **9**, 2718, doi:10.1038/s41467-018-05250-0.
7. Massonnet, F., O. Bellprat, V. Guemas and F.J. Doblas-Reyes (2016). Using climate models to estimate the quality of global observational data sets. *Science*, **6311**, 452-455, doi:10.1126/science.aaf6369 (20 citations, GS).
8. Doblas-Reyes, F.J., I. Andreu-Burillo, Y. Chikamoto, J. García-Serrano, V. Guemas, M. Kimoto, T. Mochizuki, L.R.L. Rodrigues and G.J. van Oldenborgh (2013). Initialized near-term regional climate change prediction. *Nature Communications*, **4**, 1715, doi:10.1038/ncomms2704 (158 citations, GS).
9. Guemas, V., F.J. Doblas-Reyes, I. Andreu-Burillo and M. Asif (2013). Retrospective prediction of the global warming slowdown in the past decade. *Nature Climate Change*, **3**, 649-653, doi:10.1038/nclimate1863 (158 citations, GS).
10. Doblas-Reyes, F.J., J. García-Serrano, F. Lienert, A. Pintó Biescas and L. R. L. Rodrigues (2013). Seasonal climate predictability and forecasting: status and prospects. *WIREs Climate Change*, **4**, 245-268, doi:10.1002/WCC.217 (164 citations, GS).
11. Kirtman, B., S. Power, J.A. Adedoyin, G.J. Boer, R. Bojariu, I. Camilloni, F.J. Doblas-Reyes, A.M. Fiore, M. Kimoto, G.A. Meehl, M. Prather, A. Sarr, C. Schär, R. Sutton, G.J. van Oldenborgh, G. Vecchi and H.J. Wang (2013)*. Near-term climate change: Projections and predictability. Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (Eds), 953-1028, Cambridge University Press (686 citations, GS).
12. Thomson, M.C., F.J. Doblas-Reyes, S.J. Mason, R. Hagedorn, S.J. Connor, T. Phindela, A.P. Morse and T.N. Palmer (2006). Malaria early warnings based on seasonal climate forecasts from multi-model ensembles. *Nature*, **439**, 576-579 (430 citations, GS).

Bibliometric Indices

- Google Scholar: h-index 66, i10-index 178, total citations 18377

Competitive Resources (selection; around 20 million € obtained since 2010)

- ESiWACE3 (Centre of excellence for weather and climate phase 3), coordinator, European Commission Digital Europe, 2023-2027, 510,938 euros.
- GLORIA (GLObal digital twin for RegIonal and local climate Adaptation), coordinator, Spanish Ministry of Science, 2022-2024, 530,150 euros.
- Climateurope2 (Supporting and standardizing climate services in Europe and beyond), coordinator, European Commission Horizon Europe, 2022-2027, 1,659,187 euros
- DE_340 (Climate Adaptation Digital Twins), Destination Earth via ECMWF, 2022-2024, 4,084,298 euros.
- C3S_512 (Evaluation and Quality Control of the C3S Climate Data Store), coordinator, Copernicus Climate Change Service, 2018-2021, 1,587,881 euros.
- European Climate Prediction system (EUCP), European Commission H2020, 2017-2021, contract 776613, 1,026,594 euros.

- PRIMAVERA (PRocess-based climate sIMulation: AdVances in high resolution modelling and European climate Risk Assessment), European Commission H2020, 2015-2020, contract 641727, 1,026,594 euros.
- RESILIENCE (Strengthening the European Energy Network using Climate Services), coordinator, Spanish Ministry of Economy and Competitiveness (MINECO), 2016-2018, 270,000 euros.
- SPECS (Seasonal-to-decadal climate Prediction for the improvement of European Climate Services), coordinator, European Commission FP7, 2012-2017, contract 3038378, 1,615,305 euros.
- QA4Seas (Quality Assessment Strategies for Multi-model Seasonal Forecasts), Copernicus Climate Change Service, coordinator, 2016-2018, 731,214 euros.

Awards and Recognitions

- Member of the Real Academia de Artes y Ciencias de Barcelona since 2019.
- Recipient of the Mumm-Gerbier Prize in 2006 (http://www.wmo.int/pages/about/awards/winners_mumm_en.html).

Extended Curriculum Vitae

1. Education

- PhD in Physics with honours at the Universidad Complutense of Madrid (Spain). Thesis entitled "Atmospheric blocking: GCM simulation and associated precipitation patterns" (in Spanish). Date of dissertation: 22nd May 1996.
- Post-graduate courses at the Universidad Complutense of Madrid from October 1992 to October 1996, and at Météo-France in September-October 1994.
- MSc degree in Physics at the Universidad Complutense of Madrid (Spain), June 1991.

2. Professional Experience and Employment History

- Since November 2014, ICREA research professor at the Barcelona Supercomputing Center (BSC, Barcelona, Spain), working as head of the Earth Sciences Department (https://www.bsc.es/discover-bsc/organisation/scientific-structure/earth-sciences), a group of more than 100 people (scientists, engineers and students).
- From December 2009 to November 2015, ICREA research professor at the Institut Català de Ciències del Clima (IC3, Barcelona, Spain), working as senior scientist and head of the Climate Forecasting Unit, a group of more than 20 people (scientists, technicians and PhD students).
- From March 2000 to November 2009 at the European Centre for Medium-Range Weather Forecasts (ECMWF, Reading, UK), as research scientist.
- Visiting scientist at CINECA (Bologna, Italy) in March 2000.
- From February 1999 to February 2000 at the Centro de Astrobiología, Instituto Nacional de Técnicas Aeroespaciales (Madrid, Spain) as research assistant.
- Visiting scientist at the Institute of Atmospheric Physics (Academy of Sciences, Prague, Czech Republic) in July and August 1997.
- From January 1997 to January 1999 at the CNRM (Météo-France, Toulouse, France) as research assistant.
- Visiting scientist at the CNRM (Météo-France, Toulouse, France) in September-November 1994.
- Visiting scientist at the Instituto Meteorológico Nacional (Asunción, Paraguay) in August 1994.
- From October 1992 to September 1996 at the Departamento de Física de la Tierra, Astronomía y Astrofísica II (Universidad Complutense, Madrid, Spain) as PhD student.

3. Committees and Panels

Scientific committees

- Member of the Destination Earth Strategic Advisory Board since 2022.
- Member of Community Earth System Model Advisory Board (NCAR, Boulder, USA) since 2020.
- Member of the Science Advisory Group of the APEC Climate Center (APCC, Busan, South Korea) since 2020.
- Member of the Standing Committee on Data Processing for Applied Earth System Modelling and Prediction and Projection (SC-ESMP) of the World Meteorological Organisation (WMO) since 2020.
- Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC), coordinating lead author 2018-2021.
- Modelling Advisory Council (WMAC) of the World Climate Research Programme (WCRP), member since 2012-2020, co-chair since 2018 (http://www.wcrp-climate.org/WMAC.shtml).
- Representative of the BSC in the EC-Earth modelling consortium since 2015.
- CLIVAR's Decadal Climate Variability and Predictability panel, member 2015-2020.
- Scientific Committee of the Indian Institute of Tropical Meteorology (IITM, Pune, India), member since 2015.
- Working Group on Seasonal-to-Interannual Prediction (WGSIP) of the World Climate Research Programme (WCRP), member 2011-2017, co-chair from 2012-2017 (http://www.wcrp-climate.org/index.php/wgsip-overview).

- Decadal Climate Prediction Panel (DCPP) of the WCRP, member since 2012 (http://www.wcrp-climate.org/decadal/cmip5.shtml).
- European Network for Earth System Modelling (ENES) High-Performance Computing Task Force, member since 2012 (https://verc.enes.org/ISENES2/project/na1-wp2-enes-strategy).
- European Climate, Observations and Modelling for Services (ECOMS) panel of the European Commission, member 2012-2016 (http://www.eu-ecoms.eu).
- Polar Prediction Project (PPP) of the World Weather Research Programme (WWRP), member 2011-2015 (http://polarprediction.net).
- Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC), lead author 2010-2013.

Organization of meetings

- "CMIP6 Model Analysis Workshop", head of the organising committee, Barcelona (Spain), 2019
- "Second International Conference on Subseasonal to Seasonal Prediction (S2S) and Second International Workshop on Seasonal to Decadal Prediction (S2D)", member of the executive committee, Boulder (USA), 2018.
- "Second WMO operational climate prediction workshop", head of organising committee, Barcelona (Spain), 2018.
- "Copernicus Climate Change Service evaluation and quality control workshop", head of organising committee, Barcelona (Spain), 2017.
- "International workshop on drift and initial shock in climate prediction", chair, Barcelona (Spain), 2016.
- "International workshop on polar-lower latitude linkages and their role in weather and climate prediction", co-chair, Barcelona (Spain), 2014.
- Session "Climate prediction and scenarios from season to century" at the 13th European Meteorological Society (EMS) Annual Meeting and 11th European Conference on Applications of Meteorology (ECAM), Reading (UK), co-convener since 2013.
- "International workshop on seasonal to decadal prediction" of WGSIP and WGCM, scientific committee member, Toulouse (France), 2013.
- First meeting of the ECOMS initiative, lead organizer, Barcelona (Spain), 2012.
- Session "Monthly, seasonal and decadal forecasting" at the European Geosciences Union (EGU), Vienna (Austria), co-convener from 2007 to 2018.

4. Managerial Experience

- Since November 2014 director of the Earth Sciences Department of the Barcelona Supercomputing Center (BSC, Barcelona, Spain, https://www.bsc.es/discover-bsc/organisation/scientific-structure/earth-sciences): took the leadership of the department to design a broader set of objectives, set new working principles promoting collaborative work, long-term documentation, structured training, reproducibility of the research and stability of the positions, establish a departmental organisation that rationalises resources, find the necessary financial and computing resources (the Center has little core resources), position the new research in the international scene and grow its human resources from 20 to the current 130 people.
- From December 2009 to November 2015 head of the Climate Forecasting Unit at the Institut Català de Ciències del Clima (IC3, Barcelona, Spain): created a group of more than 20 people (scientists, engineers, project manager and students) from scratch working on climate prediction and its applications, which was a novelty in Spain, almost completely funded from competitive resources and led it to a well-known international position in record time.

5. Publications

Bibliometric indices

- ORCID: 0000-0002-6622-4280
- Google Scholar: h-index 66, i10-index 178, total citations 18377

Peer-reviewed journal articles

1. Bojovic, D., A. Nicodemou, A.L. St.Clair, I. Christel and F.J. Doblas-Reyes (2022). Exploring the landscape of seasonal forecast provision by Global Producing Centres. *Climatic Change*, **172**, doi:10.1007/s10584-022-03350-x.
2. Cos, J., F.J. Doblas-Reyes, M. Jury, R. Marcos, P.-A. Bretonnière and M. Samsó (2022). The Mediterranean climate change hotspot in the CMIP5 and CMIP6 projections. *Earth System Dynamics*, **13**, 321–340, doi:10.5194/esd-13-321-2022.
3. Delgado-Torres, C., M.G. Donat, N. Gonzalez-Reviriego, L-P. Caron, P.J. Athanasiadis, P.A. Bretonnière, N.J. Dunstone, A. Ho, D. Nicoli, K. Pankatz, A. Paxian, N. Pérez-Zanón, M.S. Cabré, B. Solaraju-Murali, A. Soret and F.J. Doblas-Reyes (2022). Multi-model forecast quality assessment of CMIP6 decadal predictions. *Journal of Climate*, **35**, 4363-4382, doi:10.1175/JCLI-D-21-0811.1.
4. Döscher, R., M. Acosta, A. Alessandri, P. Anthoni, A. Arneth,T. Arsouze, T. Bergmann, R. Bernadello, S. Bousetta, L.-P. Caron, G. Carver, M. Castrillo, F. Catalano, I. Cvijanovic, P. Davini, E. Dekker, F.J. Doblas-Reyes, D. Docquier, P. Echevarria, U. Fladrich, R. Fuentes-Franco, M. Gröger, J. v. Hardenberg, J. Hieronymus, M.P. Karami, J.-P. Keskinen, T. Koenigk, R. Makkonen, F. Massonnet, M. Ménégoz, P.A. Miller, E. Moreno-Chamarro, L. Nieradzik, T. van Noije, P. Nolan, D. O'Donnell, P. Ollinaho, G. van den Oord, P. Ortega, O. Tintó Prims, A. Ramos, T. Reerink, C. Rousset, Y. Ruprich-Robert, P. Le Sager, T. Schmith, R. Schrödner, F. Serva, V. Sicardi, M. Sloth Madsen, B. Smith, T. Tian, E. Tourigny, P. Uotila, M. Vancoppenolle, S. Wang, D. Wårlind, U. Willén, K. Wyser, S. Yang, X. Yepes-Arbós and Q. Zhang (2022). The EC-Earth3 Earth system model for the Climate Model Intercomparison Project 6. *Geoscientific Model Development*, **15**, 2973–3020, doi:10.5194/gmd-2020-446.
5. Dunstone, N., J. Lockwood, B. Solaraju-Murali, K. Reinhardt, E.E. Tsartsali, P.J. Athanasiadis, A. Bellucci, A. Brookshaw, L.-P. Caron, F.J. Doblas-Reyes, B. Früh, N. González-Reviriego, S. Gualdi, L. Hermanson, S. Materia, A. Nicodemou, D. Nicolì, K. Pankatz, A. Paxian, A.A. Scaife, D. Smith and H.E. Thornton (2022). Towards useful decadal climate services. *Bulletin of the American Meteorological Society*, doi:10.1175/BAMS-D-21-0190.1.
6. Hermanson, L., D. Smith, M. Seabrook, R. Bilbao, F.J. Doblas-Reyes, E. Tourigny, V. Lapin, V.V. Kharin, W.J. Merryfield, R. Sospedra-Alfonso, P. Athanasiadis, D. Nicoli, S. Gualdi, N. Dunstone, R. Eade, A.A. Scaife, M. Collier, T. O'Kane, V. Kitsios, P. Sandery, K. Pankatz, B. Früh, H. Pohlmann, W. Müller, T. Kataoka, H. Tatebe, M. Ishii, Y. Imada, T. Kruschke, T. Koenigk, M.P. Karami, S. Yang, T. Tian, L. Zhang, T. Delworth, X. Yang, F. Zeng, Y. Wang, F. Counillon, N. Keenlyside, I. Bethke, J. Lean, J. Luterbacher, R.K. Kolli and A. Kumar (2022). WMO Global Annual to Decadal Climate Update: A prediction for 2021-2025. *Bulletin of the American Meteorological Society*, doi:https://doi.org/10.1175/BAMS-D-20-0311.1.
7. Lacagnina, C., F.J. Doblas-Reyes, G. Larnicol, C. Buontempo, A. Obregón, M. Costa-Surós, D. San-Martín, P.-A. Bretonnière, S.D. Polade, V. Romanova, D. Putero, F. Serva, A. Llabrés-Brustenga, A. Pérez and D. Cavaliere, O. Membrive, C. Steger, N. Pérez-Zanón, P. Cristofanelli, F. Madonna, M. Rosoldi, A. Riihelä and M.G. Díez (2022). Quality management framework for climate datasets. *Data Science Journal*, **21**, 1–25, doi:10.5334/dsj-2022-010.
8. Lledó, L., J. Ramon, A. Soret and F.J. Doblas-Reyes (2022). Seasonal prediction of renewable energy generation in Europe based on four teleconnection indices. *Renewable Energy*, **186**, 420-430, doi:10.1016/j.renene.2021.12.130.
9. Mahmood, R., M. G. Donat, P. Ortega, F.J. Doblas-Reyes, C. Delgado-Torres, M. Samsó and P.-A. Bretonnière (2022). Constraining low-frequency variability in climate projections to predict climate on decadal to multi-decadal time scales – a poor man's initialized prediction system. *Earth System Dynamics*, **13**, 1437–1450, doi:10.5194/esd-13-1437-2022.
10. Materia, S., C. Ardilouze, C. Prodhomme, M.G. Donat, M. Benassi, F.J. Doblas-Reyes, D. Peano, L.-P. Caron, P. Ruggieri and S. Gualdi (2022). Summer temperature response to extreme soil water conditions in the Mediterranean transitional climate regime. *Climate Dynamics*, **58**, 1943–1963, doi:10.1007/s00382-021-05815-8.
11. Meehl, G.A., H. Teng, D. Smith, S. Yeager, W. Merryfield, F.J. Doblas-Reyes and A.A. Glanville (2022). The effects of bias, drift, and trends in calculating anomalies for evaluating skill of seasonal-to-decadal initialized climate predictions. *Climate Dynamics*, **59**, 3373–3389, doi:10.1007/s00382-022-06272-7.
12. Pulkkinen, K., S. Undorf, F. Bender, P. Wikman-Svahn, F.J. Doblas-Reyes, C. Flynn, G.C. Hegerl, A. Jönsson, G.-K. Leung, J. Roussos, T.G. Shepherd and E. Thompson (2022). The value of values in climate science. *Nature Climate Change*, **12**, 4-6, doi:10.1038/s41558-021-01238-9.

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35. Palmer, T.N., A. Alessandri, U. Andersen, P. Cantelaube, M. Davey, P. Délécluse, M. Déqué, E. Díez, F.J. Doblas-Reyes, H. Feddersen, R. Graham, S. Gualdi, J.-F. Guérémy, R. Hagedorn, M. Hoshen, N. Keenlyside, M. Latif, A. Lazar, E. Maisonnave, V. Marletto, A.P. Morse, B. Orfila, P. Rogel, J.-M. Terres and M.C. Thomson (2004). Development of a European multi-model ensemble system for seasonal to inter-annual prediction (DEMETER). *ECMWF Technical Memorandum Nº* 434, ECMWF, Reading, UK.
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37. Anderson, D.L.T., T. Stockdale, M. Balmaseda, L. Ferranti, F. Vitart, F.J. Doblas-Reyes, R. Hagedorn, T. Jung, A. Vidard, A. Troccoli and T.N. Palmer (2003). Comparison of the ECMWF seasonal forecast systems 1 and 2, including the relative performance for the 1997/8 El Niño. *ECMWF Technical Memorandum Nº* 404, ECMWF, Reading, UK.
38. Pastor, M. A., F.J. Doblas-Reyes and M.J. Casado (2002). Estudio de los patrones de teleconexión hemisféricos de los reanalysis ERA y NCEP para el período 1979-1993 en invierno (in Spanish). *Servicio de Variabilidad y Predicción del Clima Technical Note Nº* 7, Instituto Nacional de Meteorología, Madrid, Spain.
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Other publications

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2. Doblas-Reyes, F.J., F. Benincasa and P.-A. Bretonnière (2015). Big Data para el estudio del cambio

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3. Guemas, V., M. Chevallier, N. Fuckar, A. Germe, T. Koenigk, S. Tietsche, F.J. Doblas-Reyes, D. Salas y Mélia and M. Déqué (2013). The role of sea ice in extended-range prediction of atmosphere and ocean. *Proceedings of ECMWF-WWRP/THORPEX Workshop on Polar Prediction*.
4. DEMETER: Multi-model seasonal predictions in a public domain. T.N. Palmer, F.J. Doblas-Reyes and R. Hagedorn, 2003. *CLIVAR Exchanges*, **8**, Nº 2/3, electronic supplement.
5. Towards forecasting epidemics in Africa - the use of seasonal forecasting. A.P. Morse, M. Hoshen, F.J. Doblas-Reyes and M.C. Thomson, 2003. *CLIVAR Exchanges*, **8**, Nº 2/3, 50-52.
6. DEMETER and the application of seasonal forecasts. R. Hagedorn, F.J. Doblas-Reyes and T.N. Palmer, 2003. *Proceedings of the ECMWF Seminar on Predictability of Weather and Climate*, 295-306.
7. DEMETER: Development of a European multi-model ensemble system for seasonal to interannual prediction. T.N. Palmer, F.J. Doblas-Reyes and R. Hagedorn, 2003. *ECMWF Newsletter*, **99**, 8-17.
8. Tropical Intra-seasonal oscillations in the DEMETER multi-model system. F.J. Doblas-Reyes, R. Hagedorn, T.N. Palmer and J.-Ph. Duvel, 2004. *Proceedings of the ECMWF Workshop on Simulation and Prediction of Intra-Seasonal Variability with Emphasis on the MJO*, 259-269.
9. Variabilidad interanual de la frecuencia de bloqueo en el Hemisferio Norte. M.J. Casado, F.J. Doblas-Reyes and M.A. Pastor, 2004. *Revista Física de la Tierra*, **16**, 25-35.
10. Multi-model seasonal forecasting for the North Atlantic and Europe. F.J. Doblas-Reyes, R. Hagedorn, M. Alonso Balmaseda and T.N. Palmer, 2004. *Revista Física de la Tierra*, **16**, 2115-125.
11. DEMETER: A first step or giant leap in the use of a seasonal ensemble prediction system for application users? A.P. Morse, P. Cantelaube, F.J. Doblas-Reyes, L. Dubus, C. Fil, R. Hagedorn, M.B. Hoshen, V. Marletto, J.M. Terres, M.C. Thomson and T.N. Palmer, 2004. *CLIVAR Exchanges*, **9**, Nº 2, 9-13.
12. Predictability and prediction of European climate. M. Rodwell, F.J. Doblas-Reyes, C. Cassou and L. Terray, 2004. *CLIVAR Exchanges*, **9**, Nº 3, 28-31.
13. From multi-model ensemble predictions to well-calibrated probability forecasts: Seasonal rainfall forecasts over South America 1959-2001. C.A.S. Coelho, D.B. Stephenson, F.J. Doblas-Reyes and M. Balmaseda, 2005. *CLIVAR Exchanges*, **10**, Nº 1, 14-20.
14. Predicción estacional dinámica del clima y sus aplicaciones (in Spanish). F.J. Doblas-Reyes, 2005. *Boletín Asociación Meteorológica Española*, Nº 10, 10-15.
15. Seasonal forecast datasets - A resource for calibrating regional climate change projections? T. N. Palmer, F.J. Doblas-Reyes, A. Weisheimer and M.J. Rodwell, 2007. *CLIVAR Exchanges*, **12**, Nº 4, 6-7.
16. ECMWF seasonal forecast System 3. F. Molteni, T. Stockdale, M. Balmaseda, L. Ferranti, F. Vitart, K. Mogensen, F.J. Doblas-Reyes, D.L.T. Anderson and A. Vidard, 2007. *CLIVAR Exchanges*, **12**, Nº 4, 7-9.
17. Integrated seasonal climate forecasts for South America. C.A.S. Coelho, D.B. Stephenson, F.J. Doblas-Reyes, M. Balmaseda and R. Graham, 2007. *CLIVAR Exchanges*, **12**, Nº 4, 13-14.
18. Air-sea process in the Indian Ocean and the intraseasonal oscillation. J.-P. Duvel H. Bellenger, P.K. Xavier and F.J. Doblas-Reyes, 2008. *Proceedings of the ECMWF Workshop on Atmosphere-Ocean Interaction*, 83-92.
19. EUROSIP: multi-model seasonal forecasting. T. Stockdale, F.J. Doblas-Reyes and L. Ferranti, 2009. *ECMWF Newsletter*, **118**, 10-16.
20. How different circulation-type clasifications can discriminate NAO phases? M.A. Pastor, M.J. Casado and F.J. Doblas-Reyes, 2009. *Revista Física de la Tierra*, **21**, 143-153.
21. Impact of ocean observations on decadal climate prediction with the ECMWF coupled forecast system. F.J. Doblas-Reyes, 2009. *Revista Física de la tierra*, **21**, 225-236.
22. CMIP5 near-term climate prediction. F. J. Doblas-Reyes, G. J. van Oldenborgh, J. García-Serrano, H. Pohlmann, A. A. Scaife and D. Smith, 2011. *CLIVAR Exchanges*, **56**, 8-11.
23. Seasonal prediction over Europe. F.J. Doblas-Reyes, 2012. *Proceedings of ECMWF Seminar on Predictability in the European and Atlantic Regions from Days to Years*, 171-185.

6. Competitive Resources

As PI (close to 20 million euros obtained since 2010)

- Polar2MidLat (Examining the role of sea ice in cold outbreaks), Marie Skłodowska-Curie Fellowship of Ramiro Saurral, European Commission Horizon Europe, 2023-2025, contract 101061202, 178,121 euros granted to the applicant.
- ESiWACE3 (Centre of excellence for weather and climate phase 3), coordinator, European Commission

Digital Europe, 2023-2027, 510,938 euros.
- GLORIA (GLObal digital twin for RegIonal and local climate Adaptation), coordinator, Spanish Ministry of Science, 2022-2024, 530,150 euros.
- EUCRA (European Climate Risk Assessment), European Environment Agency, 2022-2023, 54,330 euros.
- Climateurope2 (Supporting and standardizing climate services in Europe and beyond), coordinator, European Commission Horizon Europe, 2022-2027, 1,659,187 euros
- PATHFINDER (Pathways For resolvINg long-stanDing barriERs in global climate predictions), coordinator, Spanish Ministry of Science, 2022-2025, 145,200 euros.
- DE_340 (Climate Adaptation Digital Twins), Destination Earth via ECMWF, 2022-2024, 4,084,298 euros.
- CLINSA (Decadal climate prediction for near-term climate services and adaptation), coordinator, Spanish Ministry of Economy and Competitiveness (MINECO), 2018-2020, 95,476 euros.
- CLIM4CROP (Climate monitoring and seasonal forecast for global crop production), Marie Skłodowska-Curie Fellowship of Marco Turco, European Commission H2020, 2018-2020, contract, 165,000 euros.
- C3S_512 (Evaluation and Quality Control of the C3S Climate Data Store), Copernicus Climate Change Service, coordinator, 2018-2021, 1,587,881 euros.
- European Climate Prediction system (EUCP), European Commission H2020, 2017-2022, contract 776613, 1,026,594 euros.
- Climateurope (European Climate Observations, Modelling and Services - 2), European Commission H2020, 2016-2021, contract 689029, 225,000 euros.
- ERA4CS (European Research Area for Climate Services), European Commission H2020, 2016-2020, contract 690462, 207,500 euros.
- QA4Seas (Quality Assessment Strategies for Multi-model Seasonal Forecasts), Copernicus Climate Change Service, coordinator, 2016-2018 731,214 euros.
- PRIMAVERA (PRocess-based climate sIMulation: AdVances in high resolution modelling and European climate Risk Assessment), European Commission H2020, 2015-2020, contract 641727, 1,322,695 euros.
- IMPREX (IMproving PRedictions and management of hydrological EXtremes), European Commission H2020, 2015-2019, contract 641811, 240,000 euros.
- DPETNA (Dynamics and predictability of the ENSO teleconnection to the tropical North Atlantic), Marie Skłodowska-Curie Fellowship of Javier García-Serrano, European Commission H2020, 2015-2017, contract 655339, 158,121 euros.
- NEWA (New European Wind Atlas), European Commission H2020 and Spanish Ministry of Economy and Competitiveness (MINECO), 2015-2018, contract PCIN-2014-012-C07-07, 212,000 euros.
- RESILIENCE (Strengthening the European Energy Network using Climate Services), coordinator, Spanish Ministry of Economy and Competitiveness (MINECO), 2014-2016, 270,000 euros.
- EUCLEIA, European Commission FP7, 2014-2016, contract 607085, 138,283 euros.
- PREFACE, European Commission FP7, 2014-2017, contract 603521, 266,569 euros.
- IS-ENES2 (InfraStructure for the European Network for Earth System Modelling), European Commission FP7, 2013-2017, 57,421 euros.
- EUPORIAS (EUropean Provision Of Regional Impact Assessment on a Seasonal-to-decadal timescale), European Commission FP7, 2012-2017, contract 308291, 355,723 euros.
- SPECS (Seasonal-to-decadal climate Prediction for the improvement of European Climate Services), coordinator, European Commission FP7, 2012-2017, contract 3038378, 1,615,305 euros.
- DENFREE (Dengue research Framework for Resisting Epidemics in Europe), European Commission FP7, 2012-2016, contract 282378, 100,000 euros.
- INCLIDA (Initialization of global decadal climate forecast: a new challenge for multi-scale data assimilation), Marie Curie Fellowship of Alberto Carrassi, European Commission FP7, 2012-2014, contract 275505, 166,565 euros
- Predicción del riesgo de eventos de precipitación intensa en el Mediterráneo occidental y de la frecuencia de ciclones tropicales en el Atlántico a escala decadal, Fundación MAPFRE, 2011, 15,000 euros.
- RUCSS (Reducing Uncertainty in global Climate Simulations using a Seamless climate prediction system), coordinator, Spanish Ministry of Science and Innovation (MICINN), 2011-2013, 156,000 euros.
- CLIM-RUN (Climate Local Information in the Mediterranean region Responding to User Needs), European Commission FP7, 2011-2014, contract 265192, 214,479 euros.

- Metafor (Common Metadata for Climate Modelling Digital Repositories), subcontractor, European Commission FP7, 2010-2011, contract 211753, 50,000 euros.
- QWeCI (Quantifying Weather and Climate Impacts on Health in Developing Countries), European Commission FP7, 2010-2013, contract 243964, 147,231 euros.

As researcher

- 4C-CciCC (Climate-Carbon Interactions in the Coming Century), European Commission H2020, 2019-2023, contract 821003, 835.218,75 euros.
- C3S_34c (Prototype system for decadal climate predictions), European Center for Medium Range Weather Forecasts, Copernicus C3S, 2019-2021, 259.670,29 euros.
- European Climate Prediction system (EUCP), European Commission H2020, 2017-2021, contract 776613, 1,026,594 euros.
- S2S4E (Sub-seasonal to Seasonal climate forecasting for Energy), European Commission H2020, 2017-2020, contract 776787, 916.875,00 euros.
- APPLICATE (Advanced Prediction in Polar regions and beyond: Modelling, observing system design and LInkages associated with a Changing Arctic climaTE), European Commission H2020, 2016-2021, contract 727862, 738,592 euros.
- Previsión Interanual de la Cubierta de hielo marino del Artico y su Impacto en el Clima Europeo (PICA-ICE), Spanish Ministry of Economy and Competitiveness (MINECO), 2013-2015.
- ENSEMBLES, European Commission, 2004-2009, contract GOCE-CT-2003-505539.
- DEMETER (Development of a European Multimodel Ensemble system for seasonal to inTERannual prediction), European Commission, 2000-2003, contract EVK2-1999-00197.
- PROMISE (Predictability and variability of monsoons, and the agricultural and hydrological impacts of climate change), European Commission, 2000-2003, contract EVK2-CT-1999-00022.
- MERCURE (Modelling European Regional Climate, Understanding and Reducing Errors), European Commission, 1998, contract ENV4-CT97-0485.
- Land-Surface Processes and Climate Response, European Commission, 1998, contract ENV4-CT95-0112.
- HIRETYCS, European Commission, 1997-1998, contract ENV4-CT95-0184.
- PROVOST (European Programme on Prediction Of climate Variations On Seasonal and interannual Timescales), European Commission, 1997-1998, contract ENV4-CT95-0109.
- EUROMET (European Meteorological Education and Training), European Commission, 1997, contract ET1011-1025.
- Estudio del efecto urbano-atmosférico en el area metropolitana de Madrid, Comunidad Autónoma de Madrid (Spain), 1992 to 1994, contract CAM 286-92.
- Estudio de la consistencia espacio-temporal de datos climáticos en un area piloto, Instituto Nacional de Meteorología (Spain), 1992 to 1993, contract LRU 5280146.
- Análisis de los modos de variabilidad intraestacional en escenarios de control y perturbados (2xCO2) en la cuenca atlántica y su influencia sobre la precipitación en la España peninsular, Comisión Nacional de Ciencia y Tecnología (CYCIT, Spain), 1998-2000, contract CLI97-0558.

Contracts and agreements

- Use of Decadal Prediction for Agriculture, Joint Research Centre-Ispra, 2018, 13,500 euros.
- Clim4energy (Climate for Energy), Copernicus Climate Change Service, 2016-2018, 182,000 euros.
- Support for the Implementation of Seasonal Forecasts in the Joint Research Centre Crop Yield Modelling System, Joint Research Centre-Ispra, 2016, 15,000 euros.
- Agreement with AEMET for the “gestión y mantenimiento del Centro Regional para el Norte de África, Oriente Próximo y Europa del Sistema de Evaluación y Aviso de Tormentas de Polvo y arena de la OMM”, 2014-2018, 221,740 euros.
- Multi-annual forecasts of Atlantic tropical cyclones in a climate service context, Risk Prediction Initiatives, 2013-2014, 54,493 US dollars.

Computing proposals

- HiResNTCP (High-Resolution Near-Term Climate Prediction), 50 million CPU-hours on Marenostrum4 (Lenovo) at BSC (Spain), 2018-2019.

- SPAITAC, 5.6 million CPU-hours on both HeCTOR and ARCHER (Cray XE6 and XC30) at UK National Supercomputing Service (UK), 2013-2014.
- Initialization of seasonal-to-decadal climate predictions, 1.10 million CPU-hours on Marenostrum3 (IBM) at BSC (Spain), 2013.
- HiResClim (High-Resolution Climate Modelling) I and II (coordinator of a consortium with SMHI, CERFACS and KNMI), 85 million CPU-hours on Marenostrum3 (IBM) at BSC (Spain), 2012-2014.
- Slow down of the global warming in the early XXIst century, 1.20 million CPU-hours on Marenostrum2 (IBM Power PC) at BSC (Spain), 2012-2013.
- Seasonal climate forecast quality with EC-Earth: role of initialization and stochastic physics, 14 million SBUs at ECMWF, 2012-2014.
- SPIESM (Seasonal prediction improvement with an Earth System Model), 4 million CPU-hours on Lindgren (Cray XK6) at Partner Development Center Sweden (PDC, Sweden), 2012.
- Sea ice initial conditions for seasonal to decadal predictions, 1.10 million CPU-hours on Marenostrum2 (IBM Power PC) at BSC (Spain), 2011-2012.
- Seasonal climate forecast quality with a seamless Earth system model, 1.18 million CPU-hours on Marenostrum2 (IBM Power PC) at BSC (Spain), 2011.
- Assessment of the limit of initial-condition useful skill in interannual climate prediction, 1.55 million CPU-hours on Marenostrum2 (IBM Power PC) at BSC (Spain), 2010-2011.
- Assessment of the limit of initial condition useful skill in interannual climate prediction, 5.5 million SBUs at ECMWF, 2010-2011.

7. Fellowships

- Postdoc fellowship awarded by the Instituto Nacional de Técnicas Aeroespaciales, Spain, from February to December 1999 and January to December 2000.
- Scholarship awarded by the Ministerio de Asuntos Exteriores, Spain, for a stage at the Czech Republic from June to September 1997.
- Fellowship awarded by the Agencia Española de Cooperación Internacional, Spain, for cooperation with South American countries in August 1994.
- Fellowship awarded by the Consejería de Educación of the Comunidad Autónoma de Madrid, Spain, for training researchers at the Universidad Complutense of Madrid from 1992 to 1995.

8. Awards and Recognitions

- Member of the Real Academia de Artes y Ciencias de Barcelona since 2019.
- Recipient of the Mumm-Gerbier Prize in 2006 (http://www.wmo.int/pages/about/awards/winners_mumm_en.html).

9. Reviewer Experience

- Manuscript reviews for Nature Climate Change, Bulletin of the American Meteorological Society, Climate Dynamics, Geophysical Research Letters, International Journal of Climatology, Journal of Climate, Journal of Geophysical Research, Meteorological Applications, Monthly Weather Review, Quarterly Journal of the Royal Meteorological Society, Annales Geophysicae, Atmospheric Science Letters, Philosophical Transactions of the Royal Society A, Weather and Forecasting.
- Proposal reviews for US' National Science Foundation, UK's Natural and Environment Research Council, US' National Oceanic and Atmospheric Administration, France's Agence Nationale pour la Recherche, International Livestock Research Institute, AXA, Spain's Programa de Investigación Fundamental No Orientada, European Commission framework programmes.
- Member of the evaluation committee of the Institut Pierre-Simon Laplace federation (2019).

10. Collaborations

- Météo-France, France
- CERFACS, France
- UK Met Office, UK
- ECMWF, International
- Meteoswiss

- IRI, USA
- NOAA, USA
- AEMET, Spain
- Univ. Cantabria, Spain
- CMCC, Italy
- Environment Canada
- Max Planck Institut für Meteorologie, Germany
- Alfred Wegener Institut, Germany
- SMHI, Sweden
- KNMI, The Netherlands
- CIMA, Argentina

11. Teaching and supervision experience

- PhD supervisor of Caio Coelho (granted in 2006), Danila Volpi (2014), Luis Rodrigues (2016), Verónica Torralba (2019), Oriol Tintó (2019), Llorenç Lledó (2020), Josep Cos and Balakrishnan Solaraju Murali.
- MsC supervisor of Oriol Tintó-Prims (granted in 2014), Robin Weber (2014), Xavier Yepes (2018) and Basile Guth (2022).
- Postdoctoral supervisor under the Juan de la Cierva Programme of Neven Fuckar (2015-2017), Louis-Philippe Caron (2016-2018), Nicola Cortesi (2018-2019) and Juan Camilo Acosta (2018-2020).
- Teaching assistant in cloud physics at the Departmento de Física de la Tierra, Astronomía y Astrofísica II, Universidad Complutense (Madrid, Spain), 1992 to 1995.
- Teaching assistant in theoretical meteorology at the Facultad Politécnica, Universidad Nacional of Asunción (Asunción, Paraguay), August 1994.
- Lecturer in the Magister “Climatología Aplicada y Evaluación de Riesgos Ambientales”, Instituto Nacional de Meteorología (Madrid, Spain), May 1999 and 2000.
- Lecturer in the summer course “Numerical Methods of Environmental Prediction”, Campus Universitari de la Mediterranea (Barcelona, Spain), July 2002.

12. Computing and language skills

- UNIX/LINUX and FORTRAN programming.
- Experience as user of a large range of supercomputers.
- Knowledge of GRIB and NetCDF data formats.
- Knowledge of Microsoft Office package.
- Spanish (mother tongue), French and English, written and spoken.

13. References

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