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## Address

ISAC -CNR

Via Piero Gobetti 101,  
40129 Bologna, Italy

## Languages

Italian ★★★★★

English ★★★★★

Spanish ★★★★★

French ★★★★★

Catalan ★★★★★

## Driving Licence

A and B

# Danila Volpi

## Education

**PhD** (*Jan 2011 - Dec 2014*)

**Institut Catalá de Ciéncies del Clima (IC3), Barcelona, Spain/University of Reading, Reading, UK.**

Thesis: Benefits and drawbacks of different initialization techniques in global dynamical climate predictions.

Supervisors: Dr Virginie Guemas and Prof Francisco Doblas-Reyes (IC3), Prof Nancy Nichols and Dr Ed Hawkins (University of Reading).

Successfully defended: 27<sup>th</sup> March 2015. Graduation date: 8<sup>th</sup> July 2015.

**Additional Master of Science courses** (*Feb 2010 - Jun 2010*)

**University of Barcelona, Barcelona, Spain.**

- Climate Physics from the Master in Meteorology
- Supercomputing and parallel programming from the Master in Computational and Applied Physics.

**Master of Science in Mathematical and Numerical Modeling of Atmosphere and Ocean** (*Sep 2009 - Sep 2010*)

**University of Reading, Reading, UK.**

Dissertation title: Estimation of parameters in traffic flow models using data assimilation.

**Laurea Triennale in Matematica** (*Oct 2004 - Jul 2008*)

**Università degli Studi di Milano Bicocca, Milano, Italy.**

Dissertation title: Mathematical modeling in Atmosphere and Oceans Physics.

- Erasmus exchange Programme (*Sept 2006 - Jul 2007*)

**University of East Anglia, Norwich, UK.**

## Employment record

**Post-doctoral scientist** (*Feb 2019 - current*)

**Institute of Atmospheric Sciences and Climate (ISAC)- National Research Council (CNR), Bologna, Italy.**

Principal investigator of the Marie Skłodowska Curie project LISTEN - Lost in translation: strengthening communication skills between real world and climate models for seasonal to decadal prediction, (H2020-MSCA-IF-2017). The project objective is the implementation of new initialisation techniques for multi annual climate predictions.

**Post-doctoral scientist** (*Sep 2016 - Dec 2018*)

**Météo France - Centre National de Recherches Météorologiques (CNRM), Toulouse, France.**

Research involves the evaluation of the pre-operational and operational CNRM systems to produce seasonal climate predictions (See publications Déqué et al. 2017 and Volpi et al. (in preparation)). Duties also include the development of a tool to statistical downscale and bias correct seasonal climate predictions for the use in climate services.

### Project Manager of Climate Services (*Feb 2016 - June 2016*)

**Meteosim SL, Barcelona, Spain.**

Duties included the development of a new seasonal prediction product for South America. Contribution to edit the proposal of the successful EU H2020 VISCA: 'Vineyards Integrated Smart Climate Application', coordinated by Meteosim SL. Planification of Meteosim SL. contribution to the EU H2020 I-REACT: 'Improving Resilience to Emergencies through Advanced Cyber Technologies' and participation to the project kick-off meeting.

### Post-doctoral scientist (*Jul 2015 - Dec 2015*)

**Institut Català de Ciències del Clima (IC3)/Barcelona Supercomputing Center (BSC), Barcelona, Spain.**

Research involved the study of the mechanism for long-term Tropical Atlantic variability (see publication Sanchez Gomez et al. 2015) and the assessment of seasonal to decadal forecast skill in the Tropical Atlantic (see publication Keenlyside et al. 2015).

### Pre-doctoral contract (*Nov 2009 - Jul 2015*)

**Institut Català de Ciències del Clima (IC3), Barcelona, Spain.**

The research focus was the comparison between initialisation methods for decadal climate prediction and the assessment of state-of-the-art decadal climate prediction skill. See publications Volpi et al. 2017a, Volpi et al 2017b, Caian et al. 2015 and Volpi et al. 2013.

### Forecasting team member (*Feb 2010 - Sep 2010*)

**Weather Commerce, Reading, UK.**

Duties included the collection of information on the meteorological data used by European energy companies.

## Participation in international projects

- **MEDSCOPE** Mediterranean services chain based on climate prediction (ERA4CS), **Météo France**. (*March 2018 - Dec 2018*). Involved in work package 3 and 4 to develop a tool for end-users of climate services to statistical downscale and bias correct seasonal climate predictions. Contribution to the communication and interaction with the end-users (INRA).
- **C3S-433** (Copernicus Climate Change Service), **Météo France**, (*Sep 2016 - March 2018*). Contribution to work package 3, on the evaluation of the proof of concept, pre-operational and operational systems to produce seasonal climate predictions. Contribution to the dissemination of the results through a peer-review paper and a project deliverable. See publications Déqué et al. 2017 and Volpi et al. (under review).
- **PREFACE** Enhancing prediction of Tropical Atlantic climate and its impacts (EU FP7), **BSC**, (*Jul 2015 - Dec 2015*). Internal responsible to collect and merge the IC3/BSC contributions to the deliverables on the mechanism for long-term Tropical Atlantic variability (see publication Sanchez Gomez et al. 2015) and the assessment of seasonal to decadal forecast skill in the Tropical Atlantic (see publication Keenlyside et al. 2015).
- **SPECS** Seasonal-to-decadal climate Prediction for the improvement of European Climate Services (EU FP7), **IC3**, (*Nov 2011 - Jul 2015*). Involved in work package 3, on the comparison between initialisation methods for decadal climate prediction. See publications Volpi et al. 2017a, Volpi et al 2017b, Caian et al. 2015.
- **QweCI** Quantifying Weather and Climate Impacts on Health in Developing Countries (EU FP7), **IC3**, (*Nov 2010 - June 2013*). Duties included the assessment of state-of-the-art decadal climate prediction skill. See publication Volpi et al. 2013.

## Project management

- **LISTEN** Lost in translation: strengthening communication skills between real world and climate models for seasonal to decadal prediction, (H2020-MSCA-IF-2017), **CNR**, (Feb 2019 - Jan 2021). Principal Investigator.
- **INCIPIT** Innovative initialisation techniques for multi-annual climate predictions, (ECMWF special project), **CNR**, (Jan 2019 - Dec 2020). Principal Investigator.

## Personal grants, projects and achievements

- Contributing author to chapter 4 ‘Future global climate: scenario-based projections and near-term information’ of the IPCC WGI AR6 report, on the topic of methodology and sources of near-term information. (Sep 2018 - Dec 2020).
- H2020-MSCA-IF-2017 Marie Skłodowska-Curie Individual Fellowship. LISTEN Lost in translation: strengthening communication skills between real world and climate models for seasonal to decadal prediction. **CNR**, (Feb 2019 - Jan 2021). Total amount: 168 K euros.
- Principal investigator of the ECMWF special project INCIPIT Innovative initialisation techniques for multi-annual climate predictions. **CNR**, (to be started. Jan 2019 - Dec 2020). 72 millions SBU HPC hours.
- WMO Young scientist grant to participate to the Second international conference on seasonal to decadal prediction, **Boulder, Colorado**, (17<sup>th</sup>-21<sup>st</sup> Sep 2018).
- Invitation to visit the University of Bergen, **Bergen, Norway**, (27<sup>th</sup>-28<sup>th</sup> April 2015).
- Invitation to visit the Max Plank Institute for Meteorology (MPI), **Hamburg, Germany**, (21<sup>st</sup>-22<sup>nd</sup> April 2015).
- WMO Young scientist grant to participate to the International workshop on seasonal to decadal prediction, **Toulouse, France**, (13<sup>th</sup>-16<sup>th</sup> May 2013).
- Grant to participate to the European Earth System and Climate Modeling School, **Kos, Greece**, (1<sup>st</sup>-11<sup>th</sup> June 2011).
- Grant to participate to the Summer School of Data Assimilation, **Stockholm, Sweden**, (26<sup>th</sup>-30<sup>th</sup> April 2011).
- Erasmus Fellowship **University of East Anglia, UK**, (Sep 2006- Jul 2007) .

## Peer-reviewed publications

**Volpi D.**, Guemas V., Doblas-Reyes F. J. (2017 a). Comparison of full field and anomaly initialisation for decadal climate prediction: towards an optimal consistency between the ocean and sea-ice anomaly initialisation state, *Climate Dynamics*, 49, Issue 4, 1181-1195, doi: 10.1007/s00382-016-3373-3. (5 citations, source Google Scholar. Impact index of the journal: 4,146)

**Volpi D.**, Guemas V., Doblas-Reyes F. J., Hawkins E., Nichols N. (2017 b). Decadal climate prediction with a refined anomaly initialisation approach, *Climate Dynamics*, 48, Issue 5-6, 1841-1853 doi:10.1007/s00382-016-3176-6. (3 citations, source Google Scholar. Impact index of the journal: 4,146)

Carrassi A., Guemas V., Doblas-Reyes F. J., **Volpi D.**, Asif M. (2016). Sources of skill in near-term climate prediction: Generating initial conditions, *Climate Dynamics*, 47, Issue 12, 3693-3712, doi:10.1007/s00382-016-3036-4. (8 citations, source Google Scholar. Impact index of the journal: 4,146)

Fučkar N.S., **Volpi D.**, Guemas V. and Doblas-Reyes F. J. (2014). A posteriori adjustment of near-term climate predictions: Accounting for the drift dependence on the initial conditions. *Geophysical Research Letters*, 41, doi:10.1002/2014GL060815. (28 citations, source: Google Scholar. Impact index of the journal: 4.339)

Carrassi A., Weber R. J. T., Guemas V., Doblas-Reyes F. J., Asif M. and **Volpi D.** (2014). Full field and anomaly initialisation using a low-order climate model: a comparison and proposals for advanced formulations. *Non linear Processes in Geophysics*, 21, 521-537, 10.5194/npg-21-521-2014. (10 citations, source: Google Scholar. Impact index of the journal: 1,321)

**Volpi D.**, Doblas-Reyes F. J., García-Serrano J. and Guemas V. (2013). Dependence of the climate prediction skill on spatio-temporal scales: internal versus radiatively-forced contribution. *Geophysical Research Letters*, 40, 3213-3219, doi:10.1002/grl.50557. (3 citations, source Google Scholar. Impact index of the journal: 4.339)

## In preparation

**Volpi D.**, Batté L., Guérémy J. F. and Déqué M.. Robust evaluation of seasonal forecast quality using teleconnections, *to be submitted at Clim. Dyn.* .

## Other publications

Doblas-Reyes F., Acosta Navarro J. C., Acosta M., Bellprat O., Bilbao R., Castrillo M., Fučkar N., Guemas V., Lledó L., Ménégoz M., Prodhomme C., Serradell K., Tinto O., Batté L., **Volpi D.**, A. Ceglar, R. Haarsma and F. Massonet (2018). Using EC-Earth for climate prediction research. *ECMWF Newsletter*, 154, doi:10.21957/fd9kz3.

Déqué M., Ardilouze C., Guérémy J. F. and **Volpi D.** (2017). Evaluation of a preliminary hindcast experiment for the pre-operational phase, *Deliverable Dms3.1 of Copernicus C3S-433*.

Caian M., **Volpi D.**, Guemas V., Ménégoz M. and Wyser K. (2016). Relative merit of anomaly versus full initialisation for decadal predictions, *Deliverable 3.2.3 of SPECS*, available at <http://www.specs-fp7.eu/>.

SanchezGomez E., Mohino E., Keenlyside N., Svendsen L., DoblasReyes F. J., Terray L., **Volpi D.**, Nnamchi H. and Villamayor J. (2015). Mechanism for long-term Tropical Atlantic variability, *Deliverable 9.2 of PREFACE*, available at <https://preface.b.uib.no/>

Keenlyside N., **Volpi D.**, Exarchou E., Prodhomme C., Doblas-Reyes F. J., Svendsen L., Mohino E., Schnbein D., Shen M. L., Rodriguez-Fonseca B., Surez-Moreno R., Martin-Rey M. and Polo I. (2015). Assessment of seasonal to decadal forecast skill in the Tropical Atlantic, *Deliverable 10.1 of PREFACE*, available at <https://preface.b.uib.no/>

# Computer Skills

## Programming

- Unix bash
- R
- Matlab
- FORTRAN
- C++

## Computer softwares and tools

- CDO
- NCO
- Latex
- Experience in running EC-Earth model at Mare Nostrum (BSC) and Ithaca (IC3 cluster).
- Inkscape, gimp
- vi,gedit, kile
- GIT version control system

# Contributions to conferences

Date	Institution	Contribution	Event
May 2019	Reading, UK	Oral: "The experiments of LISTEN"	EC-earth meeting
Sept 2018	Boulder, Colorado	Oral: "Robust evaluation of seasonal forecast quality using teleconnections"	Second international conference on seasonal to decadal prediction
Apr 2017	Vienna, Austria	Poster: "Evaluation of a new CNRM-CM6 model version for seasonal climate predictions"	EGU 2017
Mar 2017	Toulouse, France	Poster: "Evaluation of CNRM-CM variability modes in a seasonal forecasting framework"	C3S General Assembly 2017
Jan 2017	Toulouse, France	Oral: "Assessment of the atmosphere and ocean interaction in a global coupled climate model in a seasonal forecast framework"	AMA 2017
Nov 2015	Dakar, Senegal	Oral: "Opportunities for seasonal forecasting application in fisheries"	ICAWA conference
Apr 2015	ISAC (Torino, Italy) CMCC (Bologna, Italy) MPI (Hamburg, Germany) SMHI (Norrköping, Sweden) University of Bergen (Bergen, Norway) Météo-France (Toulouse, France)	Oral: "Impacts of different initialisation techniques on the skill of global dynamical climate predictions"	collaborative visits
Feb 2015	DWD (Offenbach, Germany)	Oral: "Impact of different initialisation techniques on the skill of global dynamical climate predictions"	Miklip/SPECS meeting meeting on decadal prediction
May 2014	Vienna, Austria	Poster: "A variant of the anomaly initialisation approach for global climate forecast models"	EGU 2014
March 2014	IC3 (Barcelona, Spain)	Oral: "Impact of different initialisation techniques on the skill of global dynamical climate predictions"	Workshop on Initial shock, drift and systematic error
May 2013	Météo-France (Toulouse, France)	Poster: "Comparison of initialization methods in global dynamical decadal climate forecasts"	International workshop on seasonal to decadal prediction
Sept 2011	University of Reading (Reading, UK)	Oral: "Decadal predictability of surface temperature"	2011 Challenger Society Ocean Modeling group

## Training courses and other conferences

- 6<sup>th</sup> – 9<sup>th</sup> Nov 2012: *SPECS Kick off meeting*, Barcelona, Spain.
- 1<sup>st</sup> – 11<sup>th</sup> Jun 2012: *European Earth System and Climate Modeling School*, Kos, Greece.
- 26<sup>th</sup> – 30<sup>th</sup> Apr 2011: *School of Data Assimilation*, NORDITA, Stockholm.
- 18<sup>th</sup> – 27<sup>th</sup> Oct 2010: *ECMWF training course on Predictability, diagnostics and extended-range forecasting*, ECMWF, Reading.
- June 2010: *EC-earth meeting*, BSC, Barcelona, Spain.
- Dec 2009: *EC-earth meeting*, ECMWF, Reading, UK.

## Miscellanea

Reviewer for Geophysical Research Letters, Climate Dynamics and Environmental Modelling and Software.