

## Roberto Buizza



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✉ [Roberto.buizza@santannapisa.it](mailto:Roberto.buizza@santannapisa.it)

Sex Male | Date of birth 14/05/1961 | Nationality Italian, British  
Married, three grown-up children

### POSITION - Full Professor, Physics - Scuola Universitaria Superiore Sant'Anna, Pisa Italy

- From 1 February 2022, Scientific Attaché' at the Italian Embassy in London (UK)
- From November 2018, Full Professor in Physics at Scuola Universitaria Superiore Sant'Anna of Pisa. Coordinator of the 'Centre for Climate Change studies and Sustainable Actions' (3CSA), key member of the team that designed a new national PhD course on Sustainable Development and Climate change (PhD-SDC), which involves 30 Italian Universities and 100+ PhD students (due to start on 1 Nov 2021).
- Leading scientist and key developer of the ECMWF medium-range/monthly ensemble, considered the most accurate and reliable source of global forecasts for this time range. Leader of the group that completed the ensemble ocean re-analyses that are key to understand climate trends, and coordinator of the project that has been producing the first coupled reanalysis of the 20<sup>th</sup> century. Responsible for research and development of the ECMWF coupled ocean-land-atmosphere-cryosphere ensembles.
- A very successful manager of the ECMWF Research Department, with proven ability to bring together people from different backgrounds, and a member of the ECMWF Senior Management Team. A key contributor to stakeholder communication activities, especially with the ECMWF National Meteorological and Hydrological Services. Responsible for the ECMWF partnership activities that led to the establishment of cooperation agreements with China, the United States National Weather Service and the US National Centre for Atmospheric Research.
- A committed team player with a strong multidisciplinary educational background, teaching experience, effective communication skills and a strong publication record. Integrity, passion for work and intellectual curiosity, and genuine interest in teaching and mentoring are also key traits of my personality.

### WORK EXPERIENCE

#### Scientific Attache', Italian Embassy in London (UK)

1/2/2022 –  
To date

**Business or sector:** Governmental Institution, Foreign Affairs

#### Full Professor, Physics Scuola Universitaria Superiore Sant'Anna, Pisa Italy

2018 – 2022

**Key impact:** leading the establishment of a new inter-university centre to study climate change, its impacts and the identification of sustainable actions; designing and coordinating a new national PhD program on sustainability and climate change (started on 1/11/21)

**Business or sector:** Academia

#### Lead Scientist, member of the Senior Management Team – ECMWF UK

2016 – 2018

**Key impact:** contributed to the implementation of the Research Department re-organization; concluded the CA with NCAR; concluded the first European coupled reanalysis of the 20<sup>th</sup> century (with the EU project ERA-CLIM2)

**Business or sector:** International organization, weather services

#### Division Head, member of ECMWF Senior Management Team – ECMWF UK

- 2011 – 2015 **Key impact:** re-organized RD activities in predictability and ocean modelling/data-assimilation in 2011; expanded division staff and capabilities, and led work that maintained ECMWF leadership in medium-range probabilistic forecasting; led work that introduced for the first time a coupled ocean-atmosphere model for Numerical Weather Prediction (NWP); established a Cooperation Agreements with the China Meteorological Administration and the US National Weather Service; contributed to ECMWF strategic planning to secure that ECMWF operates two of the European Union Copernicus Services (€291M investments in 7 years).  
**Business or sector:** International organization, weather services
- 2009 – 2011 **Section Head, Principal Scientist and Group Leader – ECMWF UK**  
**Key impact:** further improved skill of ECMWF ensemble by introducing Ensemble Data Assimilation perturbations in the ensemble; contributed to the establishment of ECMWF as the EFAS Computational Centre (which involves about €650k investments every year)  
**Business or sector:** International organization, weather services
- 1991 - 2008 **Senior Scientist and Scientist – ECMWF UK**  
**Key impact:** developed and implemented the ECMWF medium-range ensemble; developed and implemented a stochastic model error scheme; developed diagnostic/evaluation suite; established and co-chaired HEPEX; established TIGGE; developed applications of probabilistic forecasts;  
**Business or sector:** International organization, weather services
- 1987 - 1991 **Scientist - 'Centro Ricerca Termica e Nucleare, Ente Nazionale Energia Elettrica', Milan, Italy**  
**Key impact:** built capacities in weather prediction; implemented in operation a Limited Area Model; established CO<sub>2</sub> monitoring station  
**Business or sector:** Energy, public services, environment

## EDUCATION AND TRAINING

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- 2002-2004 Master in Business and Administration (*overall distinction*) – London Business School (U.K.)  
1993-1997 PhD in Mathematics – University College London (U.K.)  
1981-1986 'Laurea' in Physics (110/110, *magna cum laude*) – Università degli Studi di Milano (Italy)

## PERSONAL SKILLS

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- Mother tongue** Italian
- Other languages** English (proficient user), French (independent user)
- Communication skills** Communication of scientific results to different types of audiences has been a significant part of my activity. I am often interviewed by Italian national newspapers, national TV channels, and radio programmes. I am used to working in an international inter-cultural context, and I have been a leader of collaborations between worldwide institutions.
- Organisational and managerial skills** Strong experience with teams of increasing size, and of managing large number of projects. Routine appraisal and comments from direct and matrix reports indicated excellent leadership and team-building skills. Coordinated work across departments (the RD re-organization introduced a matrix management structure).
- Publications and teaching**
- *Google Scholar*: **H-index 61**; citations 16,255; i10-index 123;
  - *Researchgate*: **H-index 58**; citations: 13,646; RG score 39.21 (higher than 95% of RG members);
  - *ISI-Web of Knowledge*: **H-index: 49**; citations: 8,493;
  - *Scopus*: **H-index 47**; citations 8,703;
  - **239 publications**, of which: 114 in peer-reviewed journals, 14 contributions to volumes/books, 102 Technical Reports and ECMWF publications, and 7 in Proceedings and monographies;
  - Participation to 150+ International seminars and workshops

## AFFILIATIONS AND AWARDS

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- Appointed Honorary Research Fellow at the Grantham Institute for Climate Change, Imperial College London (2022)
- Appointed member of an 'External Review Panel' by Environment Canada, to review their research to operation process (2021)
- 2021: listed in the **Stanford University top 2% scientists** in physics of the atmosphere and meteorology
- '2020 **Bert Bolin Climate Lecture**' and '2020 Bert Bolin Science Seminar', University of Stockholm Bolin Centre for Climate Research (delivered every year by a distinguished climate lecturer, to honour Prof. Bert Bolin)

- Appointed member of an Independent Review Panel of the Australian Bureau of Meteorology 's Science Program (2018-2019)
- Appointed Member of the International Scientific Advisory Panel of the Centre for Climate Research Singapore, by the Ministry of Environment and Water resources of Singapore (2017-2021)
- Appointed by the UK Met Office as a member of the Science Review Panel of the UK-India project on Weather and Climate Science for Services Partnership (2019-2021)
- Appointed by 'Chiamata Diretta per Chiara Fama' Full Professor in Physics by the Italian Ministry of Research (2019)
- Elected Honorary Life Member of the Italian Society for Climate Sciences (SISC; 2017)
- **Buchan prize**, awarded in 2002 by the Royal Meteorological Society, United Kingdom, for outstanding scientific contributions in the field of probabilistic numerical weather prediction
- Elected Fellow of the UK Royal Meteorological Society and of the UK Institute of Physics
- Member of the American Meteorological Society and of the 'Societa' Italiana di Fisica'

## SELECTED RECENT PUBLICATIONS

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- Bongioanni P, Del Carratore R, Corbianco S, Diana, A., Cavallini, G, Masciandaro M S, Dini M, and **Buizza R**, 2021: Climate change and neurodegenerative diseases. *Environmental Research*, 201 (2021) 111511 (doi: <https://doi.org/10.1016/j.envres.2021.111511>).
- **Buizza, R.**, Capobianco, E., Moretti, P. F., and Vineis, P., 2021: How can we weather a virus storm? A World Health Prediction Center inspired by meteorology could be the answer. *Journal of Translational Medicine*, 19: 102 (doi: [10.1186/s12967-021-02771-z](https://doi.org/10.1186/s12967-021-02771-z)).
- Reggiani, P., Todini, E., Boyko, O, and **Buizza, R.**, 2020: Assessing uncertainty for decision-making in climate adaptation and risk mitigation. *Intern. Jou. of Clim.*, under revision
- **Buizza, R.**, 2020: Predictability (Chapter 13). In *Elsevier Book on 'Uncertainties in Numerical Weather Prediction'*, edited by H Olafsson and J-W Bao, pp. 250 (ISBN: 978-0-12-815491-5).
- **Buizza, R.**, 2020: Probabilistic view of numerical weather prediction and ensemble prediction (Chapter 2). In *Elsevier Book on 'Uncertainties in Numerical Weather Prediction'*, edited by H Olafsson and J-W Bao, pp. 250 (ISBN: 978-0-12-815491-5).
- Zhang, F., Sun, Y. Q., Magnusson, L., **Buizza, R.**, Lin, S.-J., Chen, J.-H., and Emanuel, K., 2019: What is the predictability limit of midlatitude weather? *Jou. Atmos. Sci.*, in press. (doi: [10.1175/JAS-D-18-0269.1](https://doi.org/10.1175/JAS-D-18-0269.1))
- **Buizza, R.**, 2018: Introduction to the Special Issue on '25 years of ensemble forecasting'. *QJRMS*, 1-11 (doi: [10.1002/qj.3370](https://doi.org/10.1002/qj.3370)).
- **Buizza, R.**, et al, 2018: Advancing global and regional reanalyses. *Bull. Amer. Met. Soc.*, (doi: [10.1175/BAMS-D-17-0312.1](https://doi.org/10.1175/BAMS-D-17-0312.1)).
- **Buizza, R.**, 2018: Ensemble forecasting and the need for calibration (Chapter 2). In *Elsevier book on 'Statistical Post-processing of Ensemble Forecasts'*, edited by D. Wilks, S. Vannitsen and J. Messner, 15-48 (ISBN: 978-0-12-812372-0)
- Ruggeri, P., Kurchaski, F., **Buizza, R.**, & Ambaum, M., 2017: The transient atmospheric response to a reduction of sea-ice cover in the Barents and Kara seas. *Q. J. Roy. Meteorol. Soc.*, 143, 1632-1640 (doi: [10.1002/qj.3034](https://doi.org/10.1002/qj.3034)).
- Laloyaux, P., Balmaseda, M., Brönnimann, S., **Buizza, R.**, Dahlgren, P., de Boisseson, E., Dee, D., Kosaka, Y., Haimberger, L., Hersbach, H., Martin, M., Poli, P., Scheppers, D., 2018: CERA-20C: a coupled reanalysis of the twentieth century. *Journal of Advances in Modeling Earth Systems*, 10, 1-24 (doi: <https://doi.org/10.1029/2018MS001273>).
- Ruggeri, P, **Buizza, R.**, & Visconti, G., 2016: On the link between Barents-Kara sea-ice variability and European blocking. *J. Geophys. Res. Atmos.*, 121, 5664–5679 (doi: [10.1002/2015JD024021](https://doi.org/10.1002/2015JD024021)).
- **Buizza, R.**, & Leutbecher, M., 2015: The Forecast Skill Horizon. *Q. J. Roy. Meteorol. Soc.*, 141, Issue 693, Part B, 3366–3382 (doi: [10.1002/qj.2619](https://doi.org/10.1002/qj.2619)).
- Zagar, N., **Buizza, R.**, & Tribbia, J., 2015: A three-dimensional multivariate modal analysis of atmospheric predictability with application to the ECMWF ensemble. *J. Atmos. Sci.*, 72, 4423–4444 (doi: [10.1175/JAS-D-15-0061.1](https://doi.org/10.1175/JAS-D-15-0061.1)).
- **Buizza, R.**, 2014: Weather Prediction: Ensemble Prediction. Published in the *Encyclopaedia of Atmospheric Sciences*, Academic Press, London, 248-258 (ISBN: 9780123822253).

Roberto Buizza – 28 January 2022