

ACADEMIC BACKGROUND

2001: PhD. by the University Complutense of Madrid (UCM, Spain), department of Geophysics and Meteorology, Faculty of Physics.

1995: Degree in Physics by the University Complutense of Madrid (UCM, Spain).

CURRENT PROFESIONAL POSITION

Since 2010: Professor, Department of Geophysics and Meteorology, Faculty of Physics, UCM (Spain).

Telephone: +34 91 394 4513 Fax: +34 91 394 4398 E-mail: brfonsec@fis.ucm.es

APPOINTMENTS: Professor of Oceanography, UCM, since July 2010. Doctor Professor, UCM, March 2005 - July 2010. Assistant Professor 2001 - 2005. PhD student at UCM 1998-2001. PhD student granted at Scripps Institution of Oceanography 1996-1997

PEER-REVIEWED PUBLICATIONS

1. **Rodríguez-Fonseca**, E. Mohino, C. Roberto Mechoso, C. Caminade, M. Biasutti, M. Gaetani, J. García-Serrano, E. K. Vizzy, K. Cook, Y. Xue, I. Polo, T. Losada, L. Druyan, B. Fontaine, J. Bader, F. J. Doblas-Reyes, L. Goddard, S. Janicot, A. Arribas, W. Lau, A. Colman, D. P. Rowell, F. Kucharski, A. Voldoire (2014). Variability and Predictability of West African Droughts. The role of SST. *Journal of Climate*.
2. Martín del Rey, B. **Rodríguez-Fonseca**, I. Polo and F. Kucharski (2014). The Atlantic-Pacific Connection. A multidecadal modulation mode. *Climate Dynamics*.
3. Durán, L., **Rodríguez-Fonseca**, B., C. Yague, E. Sánchez (2012). Water Vapour vapour flux patterns and precipitation at Sierra de Guadarrama mountain range (Spain). *International Journal of Climatology*.
4. López-Parages, **Rodríguez-Fonseca**, B.; L. Terray (2014). A mechanism for the multidecadal modulation of El Niño influence in Europe. *Climate Dynamics*. 2014GL059647.
5. Capa Morocho, M., **Rodríguez-Fonseca**, B., M. Ruiz-Ramos (2014). Crop yield as a bioclimatic index of El Niño impact in Europe: crop forecast implications. *Agricultural and Forest Meteorology*.
6. Gómara, B. **Rodríguez-Fonseca**, P. Zurita-Gotor, J.G. Pinto (2014). On the relation between Explosive cyclones affecting Europe and the North Atlantic Oscillation. *Geophysical Research Letters*. 2014GL059647.
7. Gómara, J.G. Pinto, T. Woollings, G. Masato, P. Zurita-Gotor, B. **Rodríguez-Fonseca** (2014). Rossby Wave-breaking analysis of Explosive cyclones in the Euro-Atlantic sector. *Quarterly Journal of the Royal Meteorological Society*. DOI: 10.1002/qj.2190.
8. García-Serrano J., I. Polo, B. **Rodríguez-Fonseca**, T. Losada (2013). Large-scale atmospheric response to eastern Mediterranean summer-autumn SST anomalies and the associated regional impact. *Clim. Dyn.*, DOI: 10.1007/s00382-013-1940-4.
9. Diouf, I., Deme, A., Ndione, J. A., Gaye, A. T., **Rodríguez-Fonseca**, B., & Cissé, M. (2013) Climate and health: Observation and modeling of malaria in the Ferlo (Senegal). *Comptes Rendus Biologies*. Vol 336, Paq: 253-2260. DOI: 10.1016/j.crv.2013.04.001.
10. Martín-Rey, M. Irene Polo and Belén **Rodríguez-Fonseca** (2012). Changes in the Interannual Variability of the Tropical Pacific related to the equatorial Atlantic. *Scientia Marina*. doi: 103989/scimar.03610.19A
11. Losada T., B. **Rodríguez-Fonseca**, E. Mohino, J. Bader, S. Janicot, C. R. Mechoso (2012): Tropical SST and Sahel rainfall: A non-stationary relationship, *Geophysical Research Letters*, Vol. 39, L12705. DOI 10.1029/2012GL052423.
12. López-Parages J., B. **Rodríguez-Fonseca**, 2012: Multidecadal Modulation of El Niño influence on the Euro-Mediterranean rainfall, *Geophysical Research Letters*, 39. doi: 10.1029/2011GL050049.
13. Losada T., B. **Rodríguez-Fonseca**, F. Kucharski (2012): Tropical Influence on the Summer Mediterranean Climate, *Atmospheric Science Letters*, Vol. 13, pp. 36-42. DOI 10.1002/asl.359.
14. Mohino E., B. **Rodríguez-Fonseca**, T. Losada, S. Gervois, S. Janicot, J. Bader, P. Ruti, F. Chauvin (2011) Changes in the interannual SST-forced signals on West African rainfall. AGCM intercomparison. *Clim. Dyn.* DOI: 10.1007/s00382-011-1093-2
15. García-Serrano J., T. Losada, B. **Rodríguez-Fonseca** (2011) Extratropical atmospheric response to the Atlantic Niño damping. *J. Clim.*, 24, 1613-1625. DOI: 10.1175/2010JCLI3640.1.
16. García-Serrano J., B. **Rodríguez-Fonseca**, I. Bladé, P. Zurita-Gotor, A. de la Cámara (2011) Rotational atmospheric circulation during North Atlantic-European winter: the influence of ENSO. *Clim. Dyn.* DOI: 10.1007/s00382-010-0968-y.
17. Mohino, E. B. **Rodríguez-Fonseca**, C. R. Mechoso, S. Gervois, P. Ruti and F. Chauvin (2011)

Review of Impacts of Tropical Pacific/Indian oceans on the seasonal cycle of the West African monsoon. *J. Clim.* DOI: 10.1175/2011JCLI3988.1.

18. **Rodríguez-Fonseca B.**, S. Janicot, E. Mohino, T. Losada, J. Bader, C. Caminade, F. Chauvin, B. Fontaine, J. Garcia-Serrano, S. Gervois, M. Joly, I. Polo, P. Ruti, P. Roucou, A. Voldoire (2010) Interannual and decadal SST forced responses of the West African monsoon. *Atm. Sci. Lett.* DOI: 10.1002/ASL.308.
19. Ruti P.M., J.E. Williams, F. Hourdin, F. Guichard, A. Boone, P. Van Velthoven², F. Favot, I. Musat, M. Rumukkainen, M. Domínguez, M.A. Gaertner, J.P. Lafore, T. Losada, **B. Rodríguez de Fonseca**, J. Polcher, F. Giorgi, Y. Xue, I. Bouarar, K. Law, B. Josse, B. Barret, X. Yang, C. Mari, A.K. Traore (2011) Modeling the West African climate system: a review of the AMMA inter-comparison initiatives. *Atm. Sci. Lett.* DOI: 10.1002/asl.305
20. Fontaine B., J. Garcia-Serrano, P. Roucou, **B. Rodríguez-Fonseca**, T. Losada, F. Chauvin, S. Gervois, S. Sivarajan, P. Ruti, S. Janicot (2010) Impacts of Warm and Cold situations in the Mediterranean Basins on the West African monsoon: observed connection patterns (1979-2006) and climate simulations. *Clim. Dyn.*, Vol. 35, pp. 95-114. DOI 10.1007/s00382-009-0599-3.
21. Losada, T., **B. Rodríguez-Fonseca**, S. Janicot, S. Gervois, F. Chauvin, P. Ruti (2010) A multimodel approach to the Atlantic equatorial mode. Impact on the West African monsoon. *Clim. Dyn.*, Vol. 35, pp. 29-43. DOI 10.1007/s00382-009-0625-5.
22. Losada T., **B. Rodríguez-Fonseca**, I. Polo, S. Janicot, S. Gervois, F. Chauvin, P. Ruti (2010) Tropical response to the Atlantic Equatorial mode: AGCM multimodel approach. *Clim. Dyn.*, Vol. 35, pp. 45-52. DOI 10.1007/s00382-009-0624-6.
23. **Rodríguez-Fonseca B.**, I. Polo, J. García-Serrano, T. Losada, E. Mohino, C. R. Mechoso and F. Kucharski (2009) Are Atlantic Niños enhancing Pacific ENSO events in recent decades? *Geophysical Research Letters*, Vol. 36, L20705. DOI 10.1029/2009GL040048.
24. Polo I., A. Lazar, B. **Rodríguez-Fonseca** and S. Arnault (2008) Oceanic Kelvin Waves and Tropical Atlantic Intraseasonal Variability. Part I: Kelvin Wave Characterization. *Journal of Geophysical Research-Oceans*. DOI: 10.1029/2007JC004495.
25. Polo I., B. **Rodríguez-Fonseca**, T. Losada, J. García-Serrano (2008) Tropical Atlantic Variability modes (1979-2001). Part I: time-evolving SST modes related to West African rainfall *Journal of Climate*, Vol.21, pp. 6457-6475. DOI: 10.1175/2008JCLI2607.1.
26. García-Serrano J., T. Losada, B. **Rodríguez-Fonseca**, I. Polo (2008) Tropical Atlantic Variability modes (1979-2001). Part II: time-evolving atmospheric circulation related to SST-forced tropical convection. *Journal of Climate*, Vol. 21, pp. 6476-6497. DOI: 10.1175/2008JCLI2191.1
27. Losada T., B. **Rodríguez-Fonseca**, C. R. Mechoso, H-Y. Ma (2007) Impacts of SST anomalies on the North Atlantic atmospheric circulation: a case study for the northern winter 1995/96. *Clim. Dyn.*, Vol. 29, pp. 807-819. DOI 10.1007/s00382-007-0261-x.
28. **Rodríguez-Fonseca B.**, I. Polo, E. Serrano, M. Castro (2006) Evaluation of the North Atlantic SST forcing on the European and northern African winter climate. *International Journal of Climatology*, 26,179- 191. DOI:10.1002/joc.1234.
29. Polo I., **Rodríguez-Fonseca, B.**, Sheinbaum, J. (2005) On the role of the Mauritanian upwelling on the north Atlantic climate variability. *Geophysical Research Letters*. DOI:10.1029/2005GL023883.
30. **Rodríguez-Fonseca, B.**, E. Sanchez, A. Arribas (2005) Analysis of regional changes in seasonal precipitation patterns under increased greenhouse conditions. *Geophysical Research Letters*, 32, L13702-L13704. DOI:10.1029/2005GL022800.
31. **Rodríguez-Fonseca B.**, M. Castro (2002) On the connection between winter anomalous precipitation in the Iberian Peninsula and Morocco and the summer subtropical Atlantic SST *Geophysical Research Letters*, 29, 1863-1866. DOI=10.1029/2001GL014421.
32. **Rodríguez-Fonseca, B.**, E. Serrano, M. Castro (2002) Winter 10-day coupled patterns between geopotential height and Iberian Peninsula rainfall using the ECMWF precipitation reanalysis. *Journal of Climate*, 15, 1309- 1321.

ONGOING RESEARCH PROJECTS

PREFACE-EU: Enhancing prediction of Tropical Atlantic climate and its impacts FINANCIAL ENTITY: European Union. 2013- 2017. PRINCIPAL INVESTIGATOR at UCM: : Belén Rodríguez de Fonseca

CGL2012-38923-C02-01: *MULTISCALE CLIMATE VARIABILITY. AGRONOMICAL AND ECONOMIC IMPACTS*. De 2013 a 2015. M^o Economía y Competitividad; PRINCIPAL INVESTIGATOR: Belén Rodríguez de Fonseca.

122PCD1144 : *Laboratorio virtual de Meteorología y Clima*. Proyecto de Innovación Educativa (PIE). 2011-2012. Universidad Complutense de Madrid. Vicerrectorado de Evaluación de Calidad; PRINCIPAL INVESTIGATOR: Belén Rodríguez de Fonseca.

PHB2011-0113-TA: *Seminario Espana-Brasil en Variabilidad Climatica del Atlantico Tropical y Teleconexiones* .2012. Ministerio de Educacion. Programa Hispano-Brasileno de cooperacion Interuniversitaria. PRINCIPAL INVESTIGATOR: Belén Rodríguez de Fonseca.

TRACS-CGL2009-10285: *Tropical Atlantic Variability and the climate shift*. FINANCIAL ENTITY: Ministerio de Ciencia e Innovación. 2009-2012. PRINCIPAL INVESTIGATOR: Belén Rodríguez de Fonseca.

MOVAC (200800050084028): Modelization of the Global Climate Variability using a hierachy of climate models. FINANCIAL ENTITY: Ministerio de Medio Ambiente, Rural y Marino. 2009-2011. RINCIPAL INVESTIGATOR: María Luisa Montoya Redondo.

VR101/11: Creation and Donation of an statisitcal tool for prediction of Sahelian rainfall. FINANCIAL ENTITY: Vicerrectorado de Relaciones Institucionales e Investigación, UCM. 2011-2012. PRINCIPAL INVESTIGATOR: Belén Rodríguez de Fonseca.

PAST RESEARCH PROJECTS

AMMA-EU: *African Monsoon Multidisciplinary Analisis*. FINANCIAL ENTITY: European Union. 2005- 2010. PRINCIPAL INVESTIGATOR at UCM: : Belén Rodríguez de Fonseca

CGL2006-04471: *Tropical Atlantic Variability: dynamics, impacts and teleconnections*. FINANCIAL ENTITY: Ministerio de Educación y Ciencia. 2006-2009. PRINCIPAL INVESTIGATOR: Belén Rodríguez de Fonseca.

CGL2005-06600-C03-02: *The role of the ocean and the stratosphere on the predictability of the anomalous climate over Europe*. FINANCIAL ENTITY: Ministerio de Educación y Ciencia. 2005- 2008. PRINCIPAL INVESTIGATOR: Encarna Serrano Mendoza.

REN2002-03424: *Estudio de los mecanismos físicos involucrados en la predecibilidad de las anomalías climáticas invernales en el sector noratlántico*. FINANCIAL ENTITY: Ministerio de Ciencia y Tencología. 2002- 2005. PRINCIPAL INVESTIGATOR: Belén Rodríguez de Fonseca

PHD Thesis

Ph.D. THESIS SUPERVISED (UCM Department of Geophysics and Meteorology)

Polo, Irene, 2008: Tropical Atlantic Variability. Air-sea interactions and climate impacts. Univesidad Complutense de Madrid

Garcia-Serrano, Javier, 2010: Estudio de teleconexiones atmosféricas asociadas a forzamientos oceánicos. Influencia en el Clima de Europa. Univesidad Complutense de Madrid

Losada, Teresa, 2010: The Atlantic Niño. Tropical and extratropical impacts. Universidad Complutense de Madrid.

Joaquim Adolfo Xavier, 2013: econstruction of Angola rainfall variabiity during the 1979-2003 period. Universidad Complutense de Madrid

Others: More than 200 presentation in national and international meetings, Member of the stirring committee of CLIVAR-Spain, convenor of the EGU sesion: *Tropical teleconnections* (from 2008), reviewer for J. Climate, J. Geophys. Res., Geophysical Research Letters, J. Climate, Coastal Research etc..