

Short Curriculum Vitae (May, 2018)

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1. Current Occupation

- a) Assistant Professor at the Faculty of Sciences, University of Lisbon.
- b) Group leader of the Climate variability and Climate Change Group at Instituto Dom Luiz (IDL), University of Lisbon.

2. Education

- 1996-2000: Ph.D. Climatic Research Unit, University of East Anglia, UK.
- 1993-1996: M.Sc. in Meteorology, Dep. of Physics, Faculty of Sciences, University of Lisbon.
- 1987-1992: First degree in Geophysical Sciences, Dep. of Physics, Faculty of Sciences, University of Lisbon.

3. Awards and Prizes

- 3.1** International Journal of Climatology prize (2008) awarded by the Royal Meteorological Society (UK) and endowed by John Wiley publishers. Citation can be seen at the Royal Meteorological Society site: [Journal of Climatology prize](#)
- 3.2** International Meteorological Prize Eduard Fontserè (2013) awarded by the Catalan Association of Meteorology (2013) for participating in the paper "Trends and extremes of drought indices throughout the 20th century in the Mediterranean" published in the journal Natural Hazards and Earth Sciences.
- 3.3** The Earth Sciences Prize (2017) awarded by the University of Lisbon/Caixa Geral de Depósitos Prize for the publication record between 2012 and 2016.

4. Main areas of research

My research activity has been focused in climate variability and climate change topics. In recent years I've been also involved in several trans-disciplinary studies related with climate impacts, extreme phenomena and natural hazards. The main topics of research in recent years are the following:

- 1) The study of recent changes in the climate of Iberia and southern Europe, namely of surface climatic variables, such as maximum and minimum temperature, precipitation amounts (monthly averages and daily extremes). Evaluate how these changes are associated with changes in the atmospheric circulation at the large and synoptic scales.
- 2) Construct climate change scenarios for the Mediterranean region based on direct output of Global circulation Models but also using different downscaling methodologies.

- 3) Further develop the use of large teleconnection patterns (e.g. the North Atlantic Oscillation, the Eastern Atlantic pattern, the Western Mediterranean Oscillation) to characterize changes of the Mediterranean and southern European climates.
- 4) Development of robust tools to diagnostic the atmospheric circulation at various spatial and temporal scales, including: circulation weather types (daily), cut-off low systems (COLs) and storm-tracking (several days), blocking events (up to 3 weeks).
- 5) Development of statistical models and predictability studies at the monthly-seasonal range in the Atlantic-European region.
- 6) Evaluation of different types of weather driven natural hazards with particular emphasis to heatwaves, floods, droughts, landslides and large volcanic eruptions.
- 7) Assessment of the impact of solar storms and variability on the Earth's magnetic field and climate.

5. Employment history

A) *Teaching.*

- 2013 - : Assistant Professor at the Faculty of Sciences, University of Lisbon (Lisbon).
- 2007 - 2013: Invited Lecturer of Climate Change Sciences (Master degree) at the Faculty of Sciences, University of Lisbon (Lisbon).
- 2001 - 2013: Invited Lecturer of Physics, Engineering Department, Lusófona University (Lisbon).
- 1994 - 1996: Assistant Lecturer of Mathematics and Physics at Instituto Superior de Educação e Ciências (Lisbon).
- 1994 - 2000: Assistant Lecturer of Physics at the Engineering Department, Lusófona University (Lisbon).

B) *Research*

- 2007- : Senior Research at Laboratorio Asociado IDL.
- 2002- 2007: Consultant of ICAT (Institute for Applied Science and Technology).
- 2000-2001: Research Associate at Geophysical Centre (CGE) of the University of Évora, Portugal.
- 1996-1999: Research Associate at the Climatic Research Unit, Univ.of East Anglia, UK.
- 1993-1996: Research Assistant at the University of Lisbon.

C) *Projects with funding*

- Project **FORLAND** (Hydro-geomorphologic risk in Portugal: driving forces and application for land use planning). Funding: FCT (45.000€, component IDL). **2016-2019** Participant researcher (PI for IDL component)
- Project **IMDROLOOD** (Improving Drought and Flood Early Warning, Forecasting and Mitigation using real-time hydroclimatic indicators). Funding: Water-JPI Horizon2020 (149.500€, Component IDL). **2016-2019** Participant researcher (PI for IDL component)
- Project **PaleoModes** – *El clima holoceno e impactos ecológicos de la interrelación entre el Patrón del Atlántico Este (EA) y la Oscilación del Atlántico Norte (NAO) en el suroeste atlántico europeo* (€180k). **2016-2018**. Participant researcher

- Project **ERA-CLIM2** European Re-Analysis of global CLIMate observations (FP7), €310k, **2014-2016**. Participant researcher.
- Project **BRFLAS** (Brazilian Fire-Land-Atmosphere System). Funding: FCT (199.000€). **2016-2018** Participant researcher
- Project **FIRE-MODSAT** (Supporting FIRE-suppression strategies combining fire spread MODelling and SATellite data in an operational context in Portugal). Funding: FCT (14.500€, component IDL). **2014-2015** Participant researcher (PI for IDL component)
- Project **RAPIDNAO** – *Reconstrucción de la NAO durante los periodos de Cambio Climático Rápido del Holoceno*. Funding: MCyT (€180k). **2014-2016**. Participant researcher
- Project **QSECA** (Quantificação e Evolução das Secas na Península Ibérica: passado, presente e futuro). Funding: FCT (€106k). **2013-2014** Participant researcher
- Project **STORMEX** (Mid-Latitude North Atlantic Extreme Storms Variability: Diagnosis, Modelling Dynamical Processes and Related Impacts on Iberia). Funding: FCT (€30k). **2012-2014** Participant researcher (PI for IDL component)
- Project **PhDrought** (Avaliação da Predictabilidade e hibridação de Previsões sazonais de seca na Europa Ocidental). Funding: FCT (€90k). **2013-2014** Participant researcher
- Project **ERA-CLIM** European Re-Analysis of global CLIMate observations (FP7), €210k, **2011-2013**. Participant researcher.
- Project **FUME** – Forest fires under climate, social and economic changes in Europe, the Mediterranean and other fire-affected areas of the world (FP7), €181k, **2010-2013**. Coordinator of Portuguese partner participation.
- Project **ENAC** (Evolution of North Atlantic Climate; the role of Blocking and Storm-tracks in the Past, Present and Future climate of Southern Europe) Funding: FCT (€135k). **2010-2012**. Principal Investigator
- Project **PALEONAO** – *Evolución de la NAO durante los últimos 15000 años en la Península Ibérica y en Azores a partir del estudio de registros lacustres y datos climáticos instrumentales*. Funding: MCyT (€180k). **2011-2013**. Participant researcher
- Project **FLAIR** (Fire – Land – Atmosphere Inter-Relationships: understanding the processes to predict wildfire regimes in Portugal. Funding: FCT (€106k). **2010-2012**. Participant researcher
- Project **MEDIATEC** (Climate change over the Western Mediterranean and Atlantic Islands: a dendroclimatic and genetic survey of the genus Juniperus). Funding: FCT (€35k). **2010-2012**. Participant researcher (PI for IDL component)
- Project **DISASTER** (GIS database on hydro-geomorphologic disasters in Portugal: a tool for environmental management and emergency Planning). Funding: FCT (€20k). **2010-2012** Participant researcher (PI for IDL component)
- Project **CALIBRE**: Rapid climate changes in the Iberian Peninsula based on proxy Calibration, long term instrumental series and high resolution analyses of terrestrial and marine Records. Funding: MCyT (€550k). **2008-2010**. Participant researcher
- Project **CIRCE** – Climate Change and Impact Research: the Mediterranean Environment, Funding: European Union (FP6), €110k, **2007-2011**. Coordinator of Portuguese partner participation.
- Project **MedCLIVAR** - Mediterranean Climate Variability and Predictability. Member of the Steering Committee. Funding from European Science Foundation, **2006-2010**. Variable amount of money per year. Member of the Steering Committee.
- Project **COST733** (Harmonisation and Applications of Weather Types Classifications for European Regions), Funding: European Union, **2008-2010**. Variable amount of money per year. Member of the Steering Committee.
- Project **PREDATOR** – Seasonal Predictability and Downscaling over the Atlantic European Region (POCI/CTE-ATM/ 62475/2003), Funding: FCT, **2005-2008**, €15k Participant researcher
- Project **IMPACTE** – Impact in health of extreme events in Portugal: Past, Present and Future (Nº1568), Funding: Gulbenkian Foundation, **2005-2009**, €74k Participant researcher
- Project **VAST** – Variability of Atlantic Storms and their Impact on Land Climate (POCTI/CTA/46573/2002), Funding: FCT, **2005-2008**, €55k Participant researcher

- Project **CARBERIAN** – Terrestrial Vegetation Carbon Trends in the Iberian Peninsula (PDCTE/CTA/49985/2003), Funding: FCT, **2004-2007**, €35k Participant researcher
- Project **SIGN** – Signatures of Environmental Change in the Observations of the Geophysical Institutes (POCTI/CTA/47803/2002), Funding: FCT, **2004-2007**, €80k Participant researcher
- Project **CLIMAAT-II** – Climate and Meteorology of Atlantic archipelagos (Azores, Madeira, and Canary Islands). Funding: INTERREG III B. **2004-2005**, €106k Participant researcher
- Contract with National Electric Grid (**REN**) and main Portuguese Electrical Supply Company (**EDP**) for seasonal river flow forecast, **2004-2006**, €180k Principal Investigator
- Contract with National Electric Grid (**REN**) for daily river flow forecast fro Mondego, **2002-2003**, €130k Principal Investigator
- **Portuguese-Spanish** integrated action on “Impact of the North Atlantic Oscillation in river flow in Iberia”, **2003-2004**, Funding: CRUP, 2400€. Participants: Universidade de Lisboa, Universidad de Granada. Principal Investigator
- **Portuguese-Spanish** integrated action on “Characterization and modelling of heatwaves in Iberia”, **2005-2006**, Funding: CRUP, 2200€. Participants: Universidade de Lisboa, Universidad Complutense. Principal Investigator
- **Portuguese-England** integrated action (Windsor Treaty) on “Risk and Ecoregion implications of wildfire statistics in Portugal”, **2006-2007**, CRUP, 2200€. Participants: Kings College of London, Universidade de Lisboa, Universidade Técnica de Lisboa. Participant researcher
- **Portuguese-Spanish** integrated action on “Identification of moisture sources affecting the Iberian Peninsula”. Participants: Universidade de Lisboa, Universidad de Vigo. **2008-2009**, Funding: CRUP, 4000€ Participant researcher
- **Portuguese-Spanish** integrated action on “Diagnosis of the Northern Hemisphere jet stream: a new perspective from tropopause maps”. Participants: Universidade de Lisboa, Universidad de Pablo-Olavide. **2009-2011**, Funding: CRUP, 3000€ Participant researcher

6. Papers with referee

1. **Trigo R.M.**, Palutikof J.P. (1999) “Simulation of daily temperatures for climate change scenarios over Portugal: a neural network model approach”. **Climate Research**, 13, 45-59.
2. Osborn T.J., Briffa K. R., Tett S.F.B., Jones P.D. and **Trigo R.M.**(1999) “Evaluation of the North Atlantic Oscillation as simulated by a coupled climate model”. **Climate Dynamics**, 15, 685-702.
3. **Trigo R.M.**, DaCamara C. (2000) “Circulation Weather Types and their impact on the precipitation regime in Portugal”. **International Journal of Climatology**, 20, 1559-1581.
4. Santos C.A.G, Galvão C.O., Suzuki K., **Trigo R.M.** (2001) “Matsuyama city rainfall data analysis using Wavelet transform”, **Annual Journal of Hydraulic Engineering, JSCE**. 45, 211-216.
5. **Trigo R.M.**, Palutikof J.P. (2001) “Precipitation scenarios over Iberia: a comparison between direct GCM output and different downscaling techniques”. **Journal of Climate**, 14, 4422-4446.
6. **Trigo R.M.**, Osborn T.J., Corte-Real J.M. (2002) “The North Atlantic Oscillation influence on Europe: climate impacts and associated physical mechanisms”. **Climate Research**, 20, 9-17.
7. **Trigo R.M.**, Trigo I.M., DaCamara C.C., Osborn T.J. (2004) “Winter blocking episodes in the European-Atlantic sector: climate impacts and associated physical mechanisms in the Reanalysis”. **Climate Dynamics**, 23, 17-28.
8. **Trigo R.M.**, Pozo-Vazquez D., Osborn T.J, Castro-Diez Y., Gámis-Fortis S., Esteban-Parra M.J. (2004) “North Atlantic Oscillation influence on precipitation, river flow and water resources in the Iberian Peninsula”. **International Journal of Climatology**. 24, 925-944.
9. Díaz J, Linares C., López C., García-Herrera R., **Trigo R.M.** (2004) “Relationship between Environmental Factors and Infant Mortality in Madrid, 1986-1997”. **Journal of Occupational and Environmental Medicine**, 6 (8): 768-774 (DOI: 10.1097/01.jom.0000135542.12974.49)

10. **Trigo R.M.** (2004) “O Impacto da Oscilação do Atlântico Norte no caudal dos rios Ibéricos Intenacionais”, Número especial da revista **Física de La Tierra: Variabilidad Climática en la región del Atlántico**, 16, 185-195.
11. Vaquero J.M., **Trigo R.M.**, Gallego M.C. (2005) “A “lost” sunspot observation in 1785”. **Astronomische Nachricht**, 326, 112-114
12. García-Herrera R., Díaz J., **Trigo R.M.**, Hernandez E. (2005) “Extreme summer temperatures in Iberia: health impacts and associated synoptic conditions”. **Annales Geophysicae**, 23, 239-251
13. Pereira M.G., **Trigo R.M.**, DaCamara C.C., Pereira J.M.C., Leite .S.M. (2005) “Synoptic patterns associated with large summer forest fires in Portugal. **Agricultural and Forest Meteorology**, 129, 11-25
14. Zêzere J.L., **Trigo R.M.**, Trigo I.F. (2005) “Shallow and deep Landslides induced by rainfall in the Lisbon region (Portugal): assesement of relationships with the North Atlantic Oscillation”. **Natural Hazards and Earth System Sciences**, 5, 331-344
15. **Trigo R.M.**, García-Herrera R., Díaz J., Trigo I.F., Valente A. (2005) “How exceptional was the early August 2003 heatwave in France?”. **Geophysical Research Letters**, 32, L10701, doi:10.1029/2005GL022410
16. Vaquero J.M., **Trigo R.M.** (2005) “Results of the Rio de Janeiro magnetic observations 1781-1788”. **Annales Geophysicae**, 23, 1881-1887
17. **Trigo R.M.**, Zêzere J.L., Rodrigues M.L., Trigo I.F. (2005) “The influence of the North Atlantic Oscillation on rainfall triggering of Landslides near Lisbon”. **Natural Hazards** 36, 331-354, DOI 10.1007/s11069-005-1709-0
18. Damião M.C.M., **Trigo R.M.**, Cavalcanti I.F.A. and DaCamara C.C. (2005) Climatologia de bloqueios sobre o Oceano Pacífico Sul: período de 1960 a 2000, **Revista Brasileira de Meteorologia**, 20(2), 175-190.
19. Vaquero J.M., **Trigo R.M.** (2005) “Auroras observed in Portugal in late 18th century obtained from printed and manuscript meteorological observations”. **Solar Physics**, 231, 157-165, DOI: 10.1007/s11207-005-1583-7.
20. Díaz J, García-Herrera R., **Trigo R.M.**, Linares C., Valente A., Hernadéz E. (2006) “The impact of summer 2003 heat wave in Iberia: how should we measure it?”. **International Journal of Biometeorology**, DOI: 10.1007/s00484-005-0005-8
21. Paredes D., **Trigo, R.M.**, Garcia-Herrera R., Trigo, I.F. (2006) “Understanding precipitation changes in Iberia in early Spring: weather typing and storm-tracking approaches”, **Journal of Hydrometeorology**, 7, 101–113.
22. Vaquero J.M., **Trigo R.M.** (2006) “Identification of possible intense historical solar storms during the years 1781-1788 inferred from auroras and geomagnetic observations in Rio de Janeiro”. **Solar Physics**, 235; 419-432, DOI: 10.1007/s11207-006-0024-6
23. **Trigo, R.M.**, R. Garcia-Herrera, and D. Paredes, 2006: Iberia . In State of the Climate in 2005, Shein, K.A., ed., **Bulletin of the American Meteorological Society**, vol. 87, Issue 6, pp. S83-S85.
24. Vaquero J.M., **Trigo R.M.** (2006) “Results of Geomagnetic Observations in Central Africa by Portuguese Explorers during 1877-1885”. **Physics of the Earth and Planetary Interiors**, 157; 8-15, doi:10.1016/j.pepi.2006.03.012 (**LF. 2.370**)
25. **Trigo R.M.**, Pereira J.M.C., Pereira M.G., Mota B., Calado M.T., DaCamara C.C., Santo F.E. (2006) “The exceptional fire season of summer 2003 in Portugal”. **International Journal of Climatology**, 26 (13): 1741-1757 NOV 15 2006.
26. Vaquero J.M., Gallego M.C., **Trigo R.M.**, Sánchez-Bajo F., Cancillo M.L. and García J.A. (2006) “A new reconstruction of total solar irradiance since 1832”. **Atmosfera**, 19, 267-274.
27. Nieto R., Gimeno L., **Trigo R.M.** (2006) “A Lagrangian identification of major sources of Sahel moisture”. **Geophysical Research Letters**, 33, L18707, doi:10.1029/2006GL027232, 2006.
28. Rodrigo, F.S, **Trigo R.M.**,(2006) “Trends in daily rainfall in the Iberian Peninsula from 1951 to 2002”. **International Journal of Climatology**, 27, 513–529, DOI: 10.1002/joc.1409.
29. Rodrigo, F.S, **Trigo R.M.** (2007) “Trends in daily rainfall in the Iberian Peninsula from 1951 to 2002”. **International Journal of Climatology**, 27, 513–529, DOI: 10.1002/joc.1409.

30. Nieto R., Gimeno L., Gallego D., **Trigo R.M.** (2007) "Contribution to the moisture budget of airmasses over Iceland". *Meteorologische Zeitschrift*, 16, 37-44.
31. Gimeno L., Nieto R., **Trigo R.M.** (2007) "Decay of the Northern Hemisphere stratospheric polar vortex and the occurrence of cut-off low systems: an exploratory study". *Meteorological and Atmospheric Physics*, 96, 21-28. DOI: 10.1007/s00703-006-0218-3.
32. Gimeno L., **Trigo R.M.**, Ribera P., Garcia J.A. (2007) "Editorial: Special issue on cut-off low systems (COL)". *Meteorological and Atmospheric Physics*. 96, 1–2, DOI 10.1007/s00703-006-0216-5.
33. Vaquero J.M., **Trigo R.M.**, Gallego M.C., Moreno-Corral M.A. (2007) "Two early sunspots observers: Teodoro de Almeida and José Antonio Alzate". *Solar Physics*, 240: 165–175, DOI 10.1007/s11207-006-0264-5.
34. **Trigo, R.M.**, R. Garcia-Herrera, D. Paredes and A. Ramos, (2007) Iberia, in State of the Climate in 2006. Arguez, A., ed., *Bulletin of the American Meteorological Society*, 88, S106-S107.
35. Garcia-Herrera R., Paredes D., **Trigo, R.M.**, Trigo, I.F. Hernández H., Barriopedro D., Mendes M.T. (2007) "The outstanding 2004-2005 drought in the Iberian Peninsula: the associated atmospheric circulation", *Journal of Hydrometeorology*, 8, 483-498.
36. Vaquero J.M., Gallego M.C., **Trigo R.M.** (2007) "The sunspot numbers during 1736-1739 revisited" *Advances Space Research*, 40, 1895-1903, DOI: 10.1016/j.asr.2007.02.097
37. Vaquero J.M., **Trigo R.M.**, Gallego M.C.(2007) "Sporadic Aurora from Spain". *Earth Planets Space*, 59, e40-e51.
38. Marques R., Zezere J.L., **Trigo R.M.**, Gaspar J.L., Trigo I.F. (2008) "Rainfall patterns and critical values associated with landslides in Povoação County (São Miguel Island, Azores): relationships with the North Atlantic Oscillation" *Hydrological Processes*, 22, 478-494, DOI: 10.1002/hyp.6879.
39. **Trigo R.M.**, Vaquero J.M. (2008) "Un unsung hero" *Astronomy & Geophysics*, 49, 2.14-2.1.
40. Y. Le Page, J. M. C. Pereira, **R.M. Trigo**, C. da Camara, D. Oom, and B. Mota (2008) "Global fire activity patterns (1996-2006) and climatic influence: an analysis using the World Fire Atlas", *Atmos. Chem. Phys.*, 8, 1911-1924.
41. Nieto R., **Trigo R.M.**, Gimeno L.(2008) "Potential outflows pathways for Iberian atmospheric middle-lived pollution". *The Open Atmospheric Science Journal* , 2, 18-22; doi: 10.2174/1874282300802010018.
42. Gouveia C., **Trigo R.M.**, DaCamara C.C., Libonati R., Pereira J.M.C. (2008) "The North Atlantic Oscillation and European vegetation dynamics" *International Journal of Climatology*, DOI: 10.1002/joc.1682
43. Zêzere J.L., **Trigo R.M.**, Oliveira S.C., Garcia R.A.C, Fragoso M. (2008) "Rainfall triggered Landslides occurred in Lisbon region in 2006: validation of regional rainfall thresholds and relationships with the North Atlantic Oscillation". *Natural Hazards and Earth System Sciences*, 8, 483–499
44. Nieto R., Ribera P., **Trigo R.M.**, Gallego D., Gimeno L.(2008) "Dynamic identification of moisture sources in the Orinoco Basin". *Hydrological Sciences Journal*, 53, 602-617
45. Gámis-Fortis S., Pozo-Vazquez D., **Trigo R.M.**, Castro-Diez Y. (2008) "Quantifying the predictability of winter river flow in Iberia. Part I: interannual predictability". *Journal of Climate*, 21, 2484–2502, DOI: 10.1175/2007JCLI1774.1
46. Gámis-Fortis S., Pozo-Vazquez D., **Trigo R.M.**, Castro-Diez Y. (2008) "Quantifying the predictability of winter river flow in Iberia. Part II: seasonal predictability". *Journal of Climate*, 21, 2503–2518, DOI: 10.1175/2007JCLI1775.1
47. Andrade, C., **Trigo R.M.**, Freitas, M.C., Gallego M.C., Borges, P., Ramos, A.M. (2008) "Comparing Historic Records of Storm frequency and the North Atlantic Oscillation (NAO) chronology for the Azores region", *The Holocene*, 18, 745-754
48. Vaquero J.M., Valente M.A., **Trigo R.M.**, Ribeiro P., Gallego M.C. (2008) "The 1870 Space Weather Event from South-west Europe" *Journal of Geophysical Research - Space Physics* , 113, A08230
49. **Trigo, R.M.**, Gouveia C, Garcia-Herrera R. Obregón A., Bissolli P., Kennedy J.J., Parker D.E. and Pires O. (2008) "Iberia", in State of the Climate in 2007. Arguez, A., ed., *Bulletin of the American Meteorological Society*, 89, s147-s149

50. Vaquero J.M., **Trigo R.M.** (2008) " Predictions of Solar Cycle Amplitude using Solar Cycle Length: fact or artefact?", **Solar Physics**, 250, 199-206
51. **Trigo R.M.**, Valente M.A., Trigo I.F., Miranda P.M., Ramos A.M., Paredes D., García-Herrera R. (2008) " North Atlantic wind and cyclone trends and their impact in the European precipitation and Atlantic significant wave height ". **Annals of the New York Academy of Sciences**, 1146, 212–234, doi: 10.1196/annals.1446.014
52. Nieto R, Sprenger M, Wernil H, **Trigo R.M.** and Gimeno L. (2008). Identification and Climatology of Cutoff Lows near the Tropopause. **Annals of the New York Academy of Sciences**, 1146, 256–290, doi: 10.1196/annals.1446.016
53. Gimeno L., García-Herrera R. and **Trigo R.M.** (2008). Trends and directions of climate research. **Annals of the New York Academy of Sciences**, 1146, ix–xi, doi: 10.1196/annals.1446.020
54. Damião M.C.M., **Trigo R.M.**, Cavalcanti I.F.A. and DaCamara C.C. (2008) "Blocking episodes in the Southern Hemisphere: Impact on the climate of adjacent continental areas". **Pure and Applied Geophysics**, 165, 1941–1962, DOI 10.1007/s00024-008-0409-4
55. **Trigo R.M.**, Vaquero J.M, Alcoforado M.J., Barriendedos M., Taborda J., Garcia-Herrera R., Luterbacher J. (2009) "Iberia in 1816, the year without a summer". **International Journal of Climatology**, DOI: 10.1002/joc.1693
56. Gouveia C., **Trigo R.M.**, DaCamara C.C (2009) " Drought and Vegetation Stress Monitoring in Portugal using Satellite Data". **Natural Hazards and Earth System Sciences**, 9, 1-11
57. Demuzere M., **Trigo R.M.**, Vila-Guerau de Arellano J., van Lipzig N.P.N. (2009) " The impact of weather and atmospheric circulation on O3 and PM10 levels at a rural mid-latitude site". **Atmospheric Chemistry and Physics**, 9, 2695-2714
58. **Trigo, R.M.**, Barriopedro D., Gouveia C, Garcia-Herrera R. Obregón A., Bissolli P., Kennedy J.J., Parker D.E. (2009) "Iberia", in State of the Climate in 2008. Arguez, A., ed., **Bulletin of the American Meteorological Society**, 90, s149-s150
59. Damião M.C.M., Cavalcanti I.F.A., **Trigo R.M.**, DaCamara C.C., Aragão M.R.S. (2009) Episódios de bloqueios no hemisfério Sul: comparação entre reanálises do NCEP/NCAR e modelo HadCM3, **Revista Brasileira de Meteorologia**, 24, 3, 262-275
60. **Trigo, R.M.**, Ramos A., Nogueira P., Santos F.D., Garcia-Herrera R., Gouveia C. and Santo F.E. (2009) "The impact of the 2003 heatwave in Portugal: diagnostics and modelling of excessive mortality", **Environmental Science & Policy**, 12. 844-854.
61. Vaquero J.M., **Trigo R.M.** (2010), Vazquez M., Gallego M.C. "Rieger Periodicity in Solar Cycles 3 and 4 from low and mid-latitude auroral observations", **New Astronomy**, 15, 385–391
62. Fragaso M., **Trigo R.M.**, Zêzere L. (2010) "The exceptional rainfall episode registered in Lisbon in 18 February 2008", **Weather**, 65, 31-35
63. **Trigo R.M.**, Vaquero J.M., R. B. Stothers (2010) "Witnessing the impact of 1783-1784 Laki eruption in the Southern Hemisphere", **Climatic Change**, DOI 10.1007/s10584-009-9676-1
64. García-Herrera R., Díaz J., **Trigo R.M.**, Luterbacher J., Ficher E. (2010) "A review of the European summer heat wave of 2003". **Critical Reviews in Environmental Science and Technology**, 40, 267 - 306
65. Gimeno L., Nieto R., **Trigo R.M.** , Vicente-Serrano S.M, Lopes-Moreno J.I., (2010) "Where does the Iberian Peninsula moisture come from? An answer based on a Lagrangian approach". **Journal of Hydrometeorology**, DOI: 10.1175/2009JHM1182.1, 11, 421-436
66. Gouveia C., DaCamara C.C, **Trigo R.M.**, (2010) " Post fire vegetation recovery in Portugal based on SPOT-VEGETATION data ", **Natural Hazards and Earth System Sciences**, 10, 673-684.
67. Gámis-Fortis S., Esteban-Parra MJ., **Trigo R.M.**, Castro-Diez Y. (2010) "Potential predictability of an Iberian river flow based on its relationship with previous winter global SST". **Journal of Hydrology**, doi:10.1016/j.jhydrol.2010.02.010, 385, 343-349
68. **Trigo, R.M.**, Barriopedro D., Gouveia C, Obregón A., Bissolli P., Kennedy J.J., Parker D.E. (2010) "Iberia", in State of the Climate in 2009. Peterson T.C. and Baringer M.O., Eds., **Bulletin of the American Meteorological Society**, 91, s165-s167
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195. Oliveira D.S, Desprat S., Yin Q., Naughton F., **Trigo R.M.**, Rodrigues T., Abrantes F., Sánchez-Goñi M.F., (2018) "Unraveling the forcings controlling the magnitude and climate variability of the best orbital analogues for the present interglacial in SW Europe". **Climate Dynamics**, DOI10.1007/s00382-017-3948-7

Books

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2. Sergio Vicente-Serrano and **Ricardo M. Trigo** (2011) Hydrological, Socioeconomic and Ecological impacts of the North Atlantic Oscillation in the Mediterranean region, *Advances in Global Change Research* 46, **Springer**, 336 pp.

Book Chapters

1. **Trigo R.M.** Corte-Real J.M, Osborn T.J. (2004) "Influencia de la Oscilación Del Atlántico Norte en el clima Del continente Europeo y su impacto en el caudal de los rios Ibéricos". In Gimeno L., García-Herrera R., Trigo R.M., Torre L. (Edts) "La Oscillación Del Atlántico Norte y sus efectos sobre la península Ibérica y Canarias", Editorial AICA. pp. 134-157.
2. DaCamara C., **Trigo R.M.**, Mendes M. (2004) "Tipos de circulación atmosférica y su influencia en el regimen de precipitaciones en Portugal" In Gimeno L., García-Herrera R., Trigo R.M., Torre L. (Edts) "La Oscillación Del Atlántico Norte y sus efectos sobre la península Ibérica y Canarias", Editorial AICA. pp. 106-133
3. Pedro M. A. Miranda, M. Antónia Valente, António R. Tomé, **Ricardo M. Trigo**, M. Fátima E. S. Coelho, Ana Aguiar, Eduardo B. Azevedo (2006) "O clima de Portugal nos séculos XX e XXI", SIAM II, Gradiva, 45-113.
4. Lionello P., Malanotte-Rizzoli P., Boscolo R., Alpert P., Artale V., Li L., Luterbacher J., May W., **Trigo R.**, Tsimplis M., Ulbrich U., Xoplaki E., (2006): Introduction (Chapter 0), in: *The Mediterranean Climate: An Overview of the Main Characteristics and Issues*, Ed. P. Lionello, P. Malanotte-Rizzoli, and R. Boscolo, Elsevier, 1-26.
5. Luterbacher, J., and 49 coauthors, (2006): *Mediterranean Climate Variability over the last centuries, a Review* (Chapter 1), in: *The Mediterranean Climate: an overview of the main characteristics and issues*, Ed. P. Lionello, P. Malanotte-Rizzoli, and R. Boscolo, Elsevier, 27-148.
6. **Trigo, R.**, and 21 coauthors, (2006): *Relations between Variability in the Mediterranean region and Mid-Latitude variability* (lead author of Chapter 3), in: *The Mediterranean Climate: an overview of the main characteristics and issues*, Ed. P. Lionello, P. Malanotte-Rizzoli, and R. Boscolo, Elsevier, 179-226.
7. Lionello P., Bhend J., Buzzi A., Della-Marta P.M, Krichack S., Jansà A., Maheras P., Sanna A., Trigo I.F., **Trigo, R.**, (2006): *Cyclones in the Mediterranean region: climatology and effects on the environment*

- (Chapter 6), in: *The Mediterranean Climate: an overview of the main characteristics and issues*, Ed. P. Lionello, P. Malanotte-Rizzoli, and R. Boscolo, Elsevier, 324-372.
8. Monica Mendes, **Trigo R.M.**, Carlos DaCamara C. (2007) "Bloqueios atmosféricos sobre o Hemisfério Sul" In Gimeno L., García-Herrera R., Cabanelas J. (Edts) "Variabilidad Climática Natural: descripción, mecanismos y efectos sobre la circulación a escala planetaria", Editorial AICA. Cap 10, 137-144.
 9. A. Russo, **R.M. Trigo**, A. Soares (2008) "Stochastic Modelling Applied to Air Quality Space-Time Characterization", in *geoENV VI –Geostatistics for Environmental Applications*, Ed. Soares A., Pereira M.J., Dimitrakopoulos R., Springer, 83-93.
 10. **R.M. Trigo** (2008) "Quantifying the Impact of the North Atlantic Oscillation on western Iberia", in *geoENV VI –Geostatistics for Environmental Applications*, Ed. Soares A., Pereira M.J., Dimitrakopoulos R., Springer, 235-246.
 11. C. Gouveia, **R.M. Trigo** (2008) "Influence of Climate Variability on Wheat Production in Portugal", in *geoENV VI –Geostatistics for Environmental Applications*, Ed. Soares A., Pereira M.J., Dimitrakopoulos R., Springer, 335-345.
 12. **R.M. Trigo**, Gimeno L. (2009) "Wheater Pattern Changes in the Tropics and Mid-latitudes as an indicator of Global Changes", in: *Climate Change: observed impacts on Planet Earth*, Ed. Letcher T.M., Springer, 165-179.
 13. S.M. Vicente-Serrano and **R.M. Trigo** (2011) "Introduction", in *Hydrological, Socioeconomic and Ecological impacts of the North Atlantic Oscillation in the Mediterranean region*, Ed. Vicente-Serrano S. and Trigo R. M, *Advances in Global Change Research* 46, Springer, 1-8.
 14. **R.M. Trigo** (2011) "The impacts of the NAO on Hydrological Resources of the Western Mediterranean", in *Hydrological, Socioeconomic and Ecological impacts of the North Atlantic Oscillation in the Mediterranean region*, Ed. Vicente-Serrano S. and Trigo R. M, *Advances in Global Change Research* 46, Springer, 41-56.
 15. C. Gouveia and **R.M. Trigo** (2011) "The impacts of the NAO on the Vegetation Activity in Iberia", in *Hydrological, Socioeconomic and Ecological impacts of the North Atlantic Oscillation in the Mediterranean region*, Ed. Vicente-Serrano S. and Trigo R. M, *Advances in Global Change Research* 46, Springer, 113-128.
 16. J. L. Zêzere and **R.M. Trigo** (2011) "Impacts of the North Atlantic Oscillation on Landslides", in *Hydrological, Socioeconomic and Ecological impacts of the North Atlantic Oscillation in the Mediterranean region*, Ed. Vicente-Serrano S. and Trigo R. M, *Advances in Global Change Research* 46, Springer, 199-212.
 17. Xoplaki E., **Trigo, R.**, García-Herrera R., Barriopedro D., D'Andrea F., Fisher E.M., Gimeno L., Gouveia C., Hernández E., Kuglitsch F.G., Mariotti A., Nieto R., Pinto J.G., Pozo-Vazquez D., Saaroni H., Toreti A., Trigo I.F., Vicente-Serrano S.M., Yiou P., Ziv B. (2012): Large-Scale Atmospheric Circulation Driving Extreme Climate Events in the Mediterranean and its Related Impacts, in: *The Climate of the Mediterranean Region: From the Past to the Future*, Ed. P. Lionello, Elsevier, 347-417.
 18. Liberato M.L.R., Ramos A., **Trigo R.M.**, Trigo, I.F., Durán-Quesada A. M., Nieto R., Gimeno L., (2013) "Moisture Sources and Large-Scale Dynamics Associated with a Flash Flood Event", in *Lagrangian Modeling of the Atmosphere* (Eds J. Lin, D. Brunner, C. Gerbig, A. Stohl, A. Luhar and P. Webley), American Geophysical Union, Washington, D. C.. doi: 10.1029/2012GM001244
 19. Vaquero J.M **Trigo R.M.**, (2015) "The role of the sun in climate change: a brief history" in: *Earth's climate response to a changing sun*, Ed. Thierry Dudok de Wit, Ilaria Ermolli, Margit Haberreiter, EDP sciences, 109-119. EAS Publications Series, DOI: 10.1051/978-2-7598-1733-7.c104
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7. Bibliometric Information:

Nº of all indexed publications	180
Citations	8233
<i>h-index</i>	44
<i>Highly cited papers since 2005</i>	5
<i>Hot papers since 2005</i>	2

8. Other Information:

a) Languages

	Read			Write			Speak		
	Excellent	Good	Fair	Excellent	Good	Fair	Excellent	Good	Fair
Portuguese	✓			✓			✓		
English	✓			✓			✓		
Spanish	✓				✓		✓		
French		✓				✓			✓

b) Other Scientific and Editorial activities

- 2010 - Member of the Drought Interest Group (DIG) run jointly by the Climate Variability and Predictability (CLIVAR) and Global Energy and Water Cycle Experiment (GEWEX) (<http://www.clivar.org/organization/extremes/dig.php>)
- 2008-2010 Portuguese representative of **COST Action 733** on “Harmonisation and Applications of Weather Types Classifications for European Regions”
http://www.cost.esf.org/index.php?id=205&action_number=733
- 2006-2011 Member of the Steering Committee of **MedCLIVAR** – *Mediterranean Climate Variability and Predictability*. Project funded by the European Science Foundation (ESF).
http://www.esf.org/esf_article.php?language=0&article=608&domain=3&activity=1
- 2008-2012 Official evaluator of proposals submitted to the European Science Foundation (ESF).
- 2003-2006 Coordinator of the Meteorological-Climatological unit of the *Instituto de Ciência Aplicada e Tecnologia* (ICAT), Faculty of Sciences, University of Lisbon.
- 2007- 2016 Member of the Editorial Board of the journal: **The Open Atmospheric Science Journal**
- 2009- Member of the Editorial Board of the journal: **Atmosphere**
<http://www.mdpi.com/journal/atmosphere/editors/>
- 2013- Member of the Editorial Board of the journal: **Frontiers in Earth Science (Atmospheric Science)**
http://www.frontiersin.org/Atmospheric_Science/editorialboard?field=Earth_Science
- 2015- Member of the Editorial Board of the journal: **Natural Hazards and Earth System Sciences**
http://www.natural-hazards-and-earth-system-sciences.net/editorial_board.html

2017- Member of the Editorial Board of the journal: **Climate Research**
<http://www.int-res.com/journals/cr/editors/>

I've also acted as invited editor for special issues of the following journals:

- 1) Gimeno L., **Trigo R.M.**, Ribera P., Garcia J.A. (2007) "Editorial: Special issue on cut-off low systems (COL)". **Meteorological and Atmospheric Physics**. 96, 1–2, DOI 10.1007/s00703-006-0216-5
- 2) Gimeno L., García-Herrera R. and **Trigo R.M.** (2008). Trends and directions of climate research. **Annals of the New York Academy of Sciences**, 1146, ix–xi, doi: 10.1196/annals.1446.020
- 3) Gimeno L., **Trigo R.M.**, Gómez-Gesteira Moncho (2011). Editorial "Regional climate change in the NW Iberian Peninsula". **Climatic Research** <http://www.int-res.com/journals/cr/cr-specials/cr-special-27/>
- 4) Invited editor for the journal **Natural Hazards and Earth System Sciences** on the special issue with results from the Workshop EcoHCC11 "2nd International Conference on Ecohydrology and Climate Changes". http://www.natural-hazards-and-earth-system-sciences.net/submission/scheduled_special_issues.html#10
- 5) Invited editor for Regional Environmental Change publicada pela Springer Verlag on the special issue "The climate of the Mediterranean region: research progress and climate change impacts" with results from the second Workshop MEDCLIVAR that took place in September 2012 in Madrid. <http://link.springer.com/journal/10113/14/5/page/1>
- 6) Invited editor for the journal **Natural Hazards and Earth System Sciences** on fires "Spatial and temporal patterns of wildfires: models, theory, and reality".
- 7) Invited editor for **Earth System Dynamics** published by the **European Geophysical Union** on the special issue "The 8th EGU Leonardo Conference: From evaporation to precipitation: the atmospheric moisture transport" with results from the The 8th EGU Leonardo Conference that took place in December 2016 in Orense, Spain.
https://www.earth-syst-dynam.net/special_issue867.html

Lisbon, 5 May, 2018

Ricardo Machado Trigo