

Short Curriculum vitae

NAME: Gimeno, Luis// **POSITION TITLE:** Full Professor of Atmospheric Physics (CATEDRATICO)

Birth date: 29 June 1967

EDUCATION/TRAINING

DEGREE	INSTITUTION AND LOCATION	FIELD OF STUDY
Bachelor 1990	Complutense University, Madrid, Spain	Sciences
PhD 1994	Complutense University, Madrid, Spain	Atmospheric Physics <i>magna cum laude</i>

RESEARCH INTERESTS

The hydrological cycle// Origin of precipitation// Hydrometeorology// Regional Climate change and its relationship with global change// Observational studies of tropical circulation systems - Climate Diagnosis - Climatic Change// Sources of Moisture (water vapour/precipitable water transport)// Modes of Atmospheric Variability - Synoptic Meteorology

AFFILIATIONS

1997- Member of the American Geophysical Union// 1999- Member of the American Meteorological Society// 1996- Member of the EGS (now EGU)// 2020- Member of the Royal Meteorological Society

POSITIONS

2005-2007 Visiting scientist (sabbatical years). CGUL. University of Lisbon. Portugal
1997-... Professor, Dept. Applied Physics, Vigo University at Ourense. Spain (CURRENT JOB)
1995 Graduate Trainee, ECMWF. Reading, UK
1991-1997 Meteorologist, Spanish National Meteorology Institute

HONORS

- 2018. "Arquimedes Award". Spanish Science Ministry. Best Research Advisor
- 2013 International Meteorological Prize Eduard Fontserè. Catalan Association of Meteorology (2013).
- Since 2002 the research group EPhysLab, which I lead is an "Excellent Research Group" by Galician Regional Government.
- 2005 "Stefan Hepites" Awards, Romanian Academy of Sciences.
- Chair of the Earth Science committee (Spanish Ministry of Science)

PROFESSIONAL SERVICE

Member of the editorial board

*2021- Nature Scientific Data, * 2020- Stochastic Environmental Research and Risk Assessment, * 2014-2020 Frontiers in Atmospheric Science// * 2014- Atmosphere// * 2008-... Antarctic Science// * 2008-... Advances in Meteorology// * 2007-... Journal of Geophysical Research- Atmospheres// * 2007-2012. Journal of Atmospheric and Solar-Terrestrial Physics// * 2007-... Critical Reviewers in Environmental Science and Technology// * 2007-2016... Research Letters in Physics* 2007-2016... Environmental Science and Policy// * 2007-... The Open Atmospheric Science Journal// * 2007-... Progress in Natural Sciences// * 2006-... Pure and Applied Geophysics// * 2006-2016... The Scientific World Journal-Atmospheric Systems// * 2003-... Climate Research// *2004-2016... Meteorology and Atmospheric Physics// * 2005-2006 Journal of Atmospheric and Ocean Sciences

Editor is special issues of journals

* 2021 Weather and Climate Extremes. Special Issue on "Extreme Precipitation and Drought: Mechanisms associated with Atmospheric Moisture Transport"

* 2020-ongoing Chief editor Annual Series of Annals of New York Academic of Science "The year in Climate Science Research".

* 2019 Special Editor, Special Issue on "The Hydrological Cycle and the Climate Change", Annals of New York Academic of Science (NYAS).

* 2019 Special Editor Special Issue on "Central America and Caribbean Hydrometeorology and Hydroclimate". Atmosphere

* 2018 Special Editor on "Caveats in Sustainability of Offshore Energies: Balance between the Environmental Benefits of Using of the Oceans and the Need for Protection of the Environment" Sustainability

- * 2017 Special Editor on “From evaporation to precipitation: the atmospheric moisture transport“ Earth Systems Dynamics
- * 2017 Special Editor, Special Issue on “Climate Sciences”, Annals of New York Academic of Science (NYAS).
- * 2017 Special Editor on “Selected papers of the first International conference on the Hydrological Cycle” Water
- * 2017 Special Editor on “Selected papers of the second International conference in Atmospheric Science” Atmosphere
- * 2012 Special Editor on "Oceanic sources of continental precipitation". Water Resources Research
- * 2011 Special Editor on "The Role of the Atlantic warm pool in the climate of the Western Hemisphere". Journal of Geophysical Research-Atmospheres
- * 2010 Special Editor, Special Issue on "Regional climate change in the Northwestern Iberian Peninsula". Climate Research
- * 2008 Associate Editor, Special Issue on “Diagnosis and Modelling of the Tropopause: Structure, Dynamics and Variability”, Journal of Geophysical Research-Atmospheres
- * 2008 Special Editor, Special Issue on “Trends and Directions in Climate Research”, Annals of New York Academic of Science (NYAS).
- * 2008 Special Editor, Special Issue on “CAPITOUL PROJECT” Meteorology and Atmospheric Physics
- * 2007 Guest and Special Editor, Special Issue on “Cut-off Low Systems (COL)”, Meteorology and Atmospheric Physics

Reviewer of proposals for different research Grant Agencies

- * Spanish Agencies (ANEP), several years// * The USA National Science Foundation Climate and Large-Scale Dynamics Program, 2005.// * Spanish Science Ministry, several years// * FONDECYT (National Fund of Development Scientific and Technology),// * Chilean Govern, 2006 and 2007// * Chezk Academy of Science, 2007.// *Austrian Agencies, several years

Member of Committees in Scientific conferences

2000 Local Organizing Committee, AGU Chapman Conference on “North Atlantic Oscillation”// 2004 Organizing Committee, First International School in Advances Climate Studies.// 2007 Chairman and Convenor, Special Session on “Tropopause Dynamics”, 7th EMS Annual Meeting, El Escorial, Madrid, Spain.// 2009 Organizing Committee, European Science Foundation Workshop on Feedbacks of the Mediterranean dynamics in the global climate system. Sesimbra, Portugal// 2012 Organizing Comitee, 10th ICSHMO, New Caledonia, FR// 2015 Organizing Comitee, 11th ICSHMO, Santiago de Chile, Chile//2016 Organizing Comitee, The first International conference on Atmospheric Sciences // 2016 Organizing Comitee, The 2nd International Congress on Water: Floods and Drought, Ourense, Spain// 2016 Chair, the 8th EGU Leonardo Topical Conference Series on the Hydrological Cycle, Ourense. Spain //2017 Organizing Comitee, The second International conference on Atmospheric Sciences// 2017 Organizing Comitee, 4th International Conference on Ecohydrology, Soil and Climate Change, EcoHCC’17, Figueira da Foz, Portugal //2017 Coo-Chair The First International conference on the Hydrological cycle// 2020 Organizing Comitee, The third International conference on Atmospheric Sciences

RESEARCH SUPPORT

75 Extramural Research Projects funded in the last 15 years including projects from the European Commission, the USA National Foundation and the Spanish Ministry of Science.

Selected Research Support as PI

- 01/09/2022-31/08/2025 High-resolution assessment of North Atlantic moisture transport in current climate and CMIP-6 future projections (SETESTRELO)
- 01/05/2020-31/05/2021 Water Vapour Climate Change Initiative (WV_cci), European Space Agency (ESA), Climate Change Initiative – water vapor
- 01/01/2019-30/09/2021 LAGRangian analysis of the Impact on the global hydrological cycle of the Major Mechanisms of Atmospheric Moisture Transport (LAGRIMA)
- 01/04/16-31/03/19 Improving Drought and Flood Early Warning, Forecasting and Mitigation using real-time hydroclimatic indicators (IMDROFLOOD)
- 01/01/16-31/12/18 The atmosphere moisture transport, the bridge between evaporation and precipitation in the Arctic (EVOCAR)

- 01/01/2013 - 31/12/2015 The Atmospheric moisture Transport (TRAMO)
- 01/09/12-01/03/15 Arctic Climate Processes Linked Through the Circulation of the Atmosphere". EU grant code (ERANET-RUS): STProjects-094 ACPCA
- 01/01/09-31/12/11. Diagnosis and modelling of the moisture sources in the Mediterranean region
- 10/01/08-10/01/10. Extratropical Tropopause: Diagnosis and Modelling
- 3/30/03-3/30/07 Climatological validation of conceptual model at synoptic scale
- 12/01/04-12/01/07 Dynamics of precipitation in Spain
- April/07-April/11. Climate Change and Impact Research: the Mediterranean Environment (CIRCE). Role: Responsible Work package 6.1 about Mediterranean Stream, characterization and indices

Member of research Networks

COST Actions (European Cooperation in the field of Scientific and Technical Research)

Action 734: Impacts of Climate Change and Variability on European Agriculture CLIVAGRI

Action 733: Harmonisation and Applications of Weather Types Classifications for European Regions

Action 723: Data Exploitation and Modelling for the Upper Troposphere and Lower Stratosphere

Action ES0602: Towards a European Network on Chemical Weather Forecasting and Information System

Action ES0601: Advances in homogenisation methods of climate series: an integrated approach: HOME

CYTED Program (Science and Technology Iberoamerican Program for the Development)

Program CYTED-406RT0285: Efecto de los cambios globales sobre los humedales de Iberoamérica

Program CYTED-406RT0266: Red Iberoamericana para el monitoreo y pronóstico de fenómenos hidrometeorológicos

SUPERVISION OF PHD WORK

- JOSÉ CARLOS FERNÁNDEZ-ALVÁREZ, 2024 Future changes in atmospheric moisture and wind field using numerical simulations: Implications for moisture transport and wind energy. *International PhD mention*
- ALBENIS PÉREZ-ALARCON, 2023 Modeling of moisture transport associated with tropical cyclones. *International PhD mention*
- IAGO ALGARRA, 2020 Moisture transport associated with Atmospheric Rivers and Low Level Jets at global scale. *International PhD mention.*
- SANTIAGO SALVADOR 2019 The Influence of International, EU, National and Regional Legislation in the Development of Offshore Wind Farms. The Case of Galicia (Spain). *International PhD mention.*
- DANICA CIRIC, February 2019 Linking extreme precipitation events and the associated moisture transport.
- MILICA STOJANOVIC, January 2019 The role of atmospheric moisture transport in major drought episodes.
- ROBERT SORI, November 2018 Atmospheric moisture transport: the bridge between ocean evaporation and hydrological extremes in major tropical river basins *International PhD mention. UVIGO Best PhD Award 2018*
- MARTA VAZQUEZ, November 2017 Oceanic and terrestrial sources for precipitation in the Arctic: new goals from a Lagrangian perspectives
- ANTONIO PAULO FERREIRA, November 2017 On the temperature profile of the lower stratosphere and the sharpness of the tropopause
- RODRIGO CASTILLO, March 2015, Global sources of moisture: Characterization and study of their variability
- MARIA DEL MAR GOMEZ, September 2013, Analysis of the moisture sources for the Mediterranean in the period 1980-2000

- ANA MARÍA DURÁN QUESADA. July 2012. Sources of moisture for Central America and transport based on a lagrangian approach: variability, contributions to precipitation and transport mechanism. *International PhD mention.*
- ALEXANDER RAMOS. June 2012. Improving circulation weather type classifications using a 3D framework: relationship with climate variability and projections for future climates. *International PhD mention*
- JULIA HIDALGO. May 2008. An observational, numerical and theoretical approach to the daytime Urban-breeze circulation in inland cities. *European PhdD mention*
- MARCOS TESOURO. March 2008. Climatological analysis of the Cold Air Development conceptual Model
- JUAN ANTONIO AÑEL, January 2007. Climatological analysis of the tropopause through radiosonde data. *UVIGO Best PhD Award 2008. Calouste Gulbenkian Award 2008*
- RAQUEL NIETO, April 2005. Climatological validation of the Cut-off Low System conceptual model. *2009 Young Scientist European Meteorological Society Award. 2011 Young Scientist European Geophysical Union Award (Atmospheric Sciences Division)*
- LAURA DE LA TORRE. September 2003. Diagnosis of the Northern Hemisphere Annular Mode through NCAR-NCEP reanalysis. *UVIGO Best PhD Award 2003.*

PUBLICATIONS

290 peer-reviewed publications included in SCI and 42 Book Chapters

(listed in http://ephyslab.uvigo.es/index.php/eng/personal/dr_luis_gimeno_presa)

THIRTY SELECTED PUBLICATION (in the last twenty years-SORTED BY PUBLICATION DATE)

- Gimeno-Sotelo, L., Sorí, R., Nieto, R., Vicente-Serrano S. and Gimeno L. (2024). **Unravelling the origin of the atmospheric moisture deficit that leads to droughts.** *Nature Water* (2024). <https://doi.org/10.1038/s44221-023-00192-4>
- Fernández-Alvarez, J.C., Pérez-Alarcón, A., Eiras-Barca, J. Rahimi, S, Nieto, R. and Gimeno, L. **Projected changes in atmospheric moisture transport contributions associated with climate warming in the North Atlantic.** *Nature Commun* 14, 6476 (2023). <https://doi.org/10.1038/s41467-023-41915-1>
- J. Cui, X. Lian, C. Huntingford, L. Gimeno, T. Wang, J. Ding, M. He, H. Xu, A. Chen, P. Gentine, S. Piao (2022) **Global water availability boosted by vegetation-driven changes in atmospheric moisture transport,** *Nature Geoscience*, DOI: 10.1038/s41561-022-01061-7
- **L. Gimeno, J. Eiras-Barca, A.M. Durán-Quesada, F. Dominguez, R. Van der Ent, H. Sodemann, R. Sánchez-Murillo, R. Nieto, and J.W. Kirchner (2021) The Residence Time of Water Vapour in the Atmosphere.** *Nature Reviews Earth and Environment* doi: 10.1038/s43017-021-00181-9 **BY INVITATION**
- **L. Gimeno, Algarra, I., Eiras-Barca, J., Ramos, A. M., & Nieto, R. (2021). Atmospheric river, a term encompassing different meteorological patterns.** *Wiley Interdisciplinary Reviews: Water*, 8(6), e1558. <https://doi.org/10.1002/wat2.1558> **BY INVITATION**
- Algarra, R. Nieto, A.M. Ramos, J. Eiras-Barca, R.M. Trigo, **L. Gimeno (2020) Significant increase of global anomalous moisture uptake feeding landfalling Atmospheric Rivers,** *Nature Communications*, Vol. 11, 5082 (2020). DOI: <https://doi.org/10.1038/s41467-020-18876-w>
- **L. Gimeno, R. Nieto, R. Sorí (2020) The growing importance of oceanic moisture sources for continental precipitation,** *Nature npj Climate and Atmospheric Science*, Vol. 3, Article number: 27 (2020), DOI: <https://doi.org/10.1038/s41612-020-00133-y>
- **L. Gimeno, M. Vázquez, J. Eiras-Barca, R. Sorí, M. Stojanovic, I. Algarra, R. Nieto, A.M. Ramos, A.M. Durán-Quesada, F. Dominguez (2020) Recent progress on the sources of continental precipitation as revealed by moisture transport analysis,** *Earth Science Reviews*, Vol. 201, February 2020, 103070; p: 1-25 DOI: <https://doi.org/10.1016/j.earscirev.2019.103070> (**BY INVITATION**)

- **L. Gimeno**, M. Vázquez, J. Eiras-Barca, R. Sorí, I. Algarra, R. Nieto (2019) **Atmospheric moisture transport and the decline in Arctic Sea ice**, *Wiley Interdisciplinary Reviews-Climatic Change*, May, Pages 1-12 DOI: <https://doi.org/10.1002/wcc.588> (BY INVITATION)
- • **L. Gimeno-Sotelo**, R. Nieto, M. Vázquez, **L. Gimeno** (2019) **The role of moisture transport for precipitation in the inter-annual and inter-daily fluctuations of the Arctic sea ice extension**. *Earth Syst. Dynam.*, 10, 121-133, <https://doi.org/10.5194/esd-10-121-2019> (Highlighted and ARQUIMEDES AWARD, SPANISH SCIENCE MINISTRY TO THE BEST RESEARCH ADVISOR)
- **L. Gimeno-Sotelo**, R. Nieto, M. Vázquez, **L. Gimeno** (2018) **A new pattern of the moisture transport for precipitation related to the drastic decline in Arctic sea ice extent**, *Earth System Dynamics*, 9, 611-625, 2018 <https://doi.org/10.5194/esd-9-611-2018> (ARQUIMEDES AWARD, SPANISH SCIENCE MINISTRY TO THE BEST RESEARCH ADVISOR)
- J. A. Collins, M. Prange, T. Caley, **L. Gimeno**, B. Beckmann, S. Mulitza, C. Skonieczny, D. Roche, E. Schefuß (2017) **Rapid termination of the African Humid Period triggered by northern high-latitude cooling**, *Nature Communications*, 8, doi:10.1038/s41467-017-01454-y
- **L. Gimeno**, F. Dominguez, R. Nieto, R.M. Trigo, A. Drumond, C. Reason, A.S. Taschetto, A.M. Ramos, R. Kumar, J. Marengo (2016) **Major Mechanisms of Atmospheric Moisture Transport and Their Role in Extreme Precipitation Events**, *Annual Review of Environment and Resources*, 2016. 41:117-41, doi: 10.1146/annurev-environ-110615-085558 BY INVITATION
- D.G. Miralles, R. Nieto, N.G. McDowell, W.A. Dorigo, N.E.C Verhoest, Y.Y. Liu, A.J. Teuling, A.J. Dolman, S.P. Good, **L. Gimeno** (2016) **Contribution of water-limited ecoregions to their own supply of rainfall**, *Environmental Research Letters*, vol 11, doi: doi:10.1088/1748-9326/11/12/124007
- **L. Gimeno**, R. Nieto, M. Vázquez, D.A. Lavers (2014) **Atmospheric rivers: a mini-review**, *Frontiers in Earth Science*, 2:2. doi: 10.3389/feart.2014.00002 BY INVITATION
- **L. Gimeno** (2014) **Oceanic sources of continental precipitation**, *Water Resources Research*, 50, doi:10.1002/2014WR015477 (position article as special issue editor)
- **L. Gimeno**, R. Nieto, A. Drumond, R. Castillo, R.M. Trigo (2013) **Influence of the intensification of the major oceanic moisture sources on continental precipitation**, *Geophysical Research Letters*, 40, 1443-1450, doi:10.1002/grl.50338
- **L. Gimeno** (2013) **Grand challenges in atmospheric science**, *Frontiers in Earth Science*, doi: 10.3389/feart.2013.00001 (position article as speciality chief editor)
- Peterson T C, et al. including **L. Gimeno** (2013) **Explaining extreme events of 2012 from a climate perspective** *Bull. Am. Meteorol. Soc.* 94 S1-74 (ISI highly cited article)
- **L. Gimeno**, A. Stohl, R.M. Trigo, F. Domínguez, K. Yoshimura, L. Yu, A. Drumond, A.M. Durán-Quesada, R. Nieto (2012) **Oceanic Sources of Continental Precipitation**, *Reviews of Geophysics* doi:10.1029/2012RG000389 BY INVITATION (ISI highly cited article)
- **L. Gimeno**, R. Nieto, A. Drumond, A.M. Durán-Quesada (2012) **Ocean Evaporation and Precipitation**, *Encyclopedia of Sustainability Science and Technology. Springer reference* ISBN 978-1-4419-0852-0 BY INVITATION
- **L. Gimeno**, R. Nieto, A. Drumond, A.M. Durán-Quesada, A. Stohl, H. Sodemann, R.M. Trigo (2011) **A Close Look at Oceanic Sources of Continental Precipitation**, *EOS (feature article)*, 92(23), 193-200. BY INVITATION
- S.M. Vicente-Serrano, J.I. Lopez-Moreno, **L. Gimeno**, R. Nieto, E. Morán-Tejada, J. Lorenzo-Lacruz, S. Beguería, C. Azorin-Molina (2011) **A Multi-Scalar Global Evaluation of the Impact of ENSO on Droughts**, *Journal of Geophysical Research*, 116, D20109, doi:10.1029/2011JD016039 HIGHLIGHTED IN NATURE CLIMATE CHANGE
- P. Sousa, R.M. Trigo, P. Aizpurua, R. Nieto, **L. Gimeno**, R. Garcia-Herrera (2011) **Trends and extremes of drought indices throughout the 20th century in the Mediterranean**, *NHESS, Special Issue "Understanding dynamics and current developments of climate extremes in the Mediterranean region"*, 11, 33-51; doi:10.5194/nhess-11-33-2011 (INTERNATIONAL METEOROLOGICAL PRIZE EDUARD FONTSERÈ BY THE CATALAN ASSOCIATION OF METEOROLOGY)
- **L. Gimeno**, A. Drumond, R. Nieto, R. Trigo, and A. Stohl (2010), **On the origin of continental precipitation**, *Geophys. Res. Lett.*, doi:10.1029/2010GL043712 HIGHLIGHTED IN EOS. (ISI highly cited article)

- **L. Gimeno**, R. Nieto, R.M. Trigo, S. Vicente and J.I. Lopez- Moreno (2010) **Where does the Iberian Peninsula moisture come from? An answer based on a Lagrangian approach.** *Journal of Hydrometeorology*, doi: 10.1175/2009JHM1182.1)
- R. Nieto, **Gimeno L** and Trigo R (2006) **A Lagrangian identification of major sources of Sahel moisture.** *Geophysical Research Letters* **33**, L18707, 6pp.; doi:10.1029/2006GL027232 **EUROPEAN GEOPHYSICAL UNION AWARD**
- R. Nieto, **Gimeno L**, de la Torre L, Ribera P, Gallego D, García-Herrera R, García JA, Núñez M, Redaño A and Lorente J (2005) **Climatological features of cut-off low systems in the Northern Hemisphere.** *Journal of Climate* **18**, 3085-3113 **HIGHLIGHTED IN THE BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY, EUROPEAN METEOROLOGICAL SOCIETY AWARD**
- Bojariu R y **Gimeno L** (2003) **Predictability and numerical modelling of the North Atlantic Oscillation.** *Earth Science Reviews* **63 (1-2)**, 145-168) AUTHORS ORDERED ALPHABETICALLY.
- Bojariu R y **Gimeno L** (2003) **The role of snow cover fluctuations in multiannual NAO persistence.** *Geophysical Research Letters* **30** N° 4; doi: 10.1029/2002GL015651.) **STEFAN SPITES AWARD. AUTHORS ORDERED ALPHABETICALLY.**