Fecha del CVA	19/11/2024

Parte A. DATOS PERSONALES

Nombre	Daniel		
Apellidos	Duque Campayo		
Sexo	Hombre	Fecha de Nacimiento	20/05/1971
DNI/NIE/Pasaporte			
URL Web			
Dirección Email			
Open Researcher and Contributor ID (ORCID)	0000-0002-2248-5630		

A.1. Situación profesional actual

Puesto	Profesor Titular de Universidad		
Fecha inicio	2012		
Organismo / Institución	Universidad Politécnica de Madrid		
Departamento / Centro	Ciencias Aplicadas a la Ingeniería Naval / Escuela Técnica Superior de Ingenieros Navales		
País		Teléfono	
Palabras clave	220404 - Mecánica de fluidos		

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora - indicar meses totales, según texto convocatoria-)

Periodo	Puesto / Institución / País
2009 - 2012	Profesor Titular de Universidad interino / Universidad Politécnica de Madrid
2005 - 2009	Profesor titular de universidad interino / Universidad Autónoma de Madrid
2003 - 2005	Contrato Ramón y Cajal / Consejo Superior de Investigaciones Científicas
2002 - 2003	Becario postdoctoral / Simon Fraser University / Canadá
2000 - 2002	Becario postdoctoral / Ministerio de Ciencia y Tecnología / Estados Unidos de América
1998 - 2000	Profesor ayudante de universidad LRU / Universidad Autónoma de Madrid
1995 - 1998	Becario predoctoral / Consejería de educación de la Comunidad Autónoma de Madrid / Estados Unidos de América
1994 - 1995	Becario predoctoral / Universidad Autónoma de Madrid / Estados Unidos de América

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Licenciado en Ciencias Físicas Especialidad Física de Materiales	Universidad Autónoma de Madrid	1994

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con “peer review” y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

1 **Artículo científico**. Zhang, Wenzhe; Calderon-Sanchez, Javier; Duque, Daniel; Souto-Iglesias, Antonio. 2024. Computational Fluid Dynamics (CFD) applications in Floating Offshore Wind Turbine (FOWT) dynamics: A review. Applied Ocean Research. Elsevier. 150, pp.104075-104075.

2 **Artículo científico**. Luis Cercos-Pita, Jose; Duque, Daniel; Eleazar Merino-Alonso, Pablo; Calderon-Sanchez, Javier. 2024. Boundary conditions for SPH through energy conservation. Computers & Fluids. Pergamon. 285, pp.106454. ISSN 0045-7930.

3 **Artículo científico**. Daniel Duque. 2023. A unified derivation of Voronoi, power, and finite-element Lagrangian computational fluid dynamics. European Journal of Mechanics - B/Fluids. Elsevier Masson. 98, pp.268-278.

4 **Artículo científico**. Jose Luis Cercos-Pita; Pablo Eleazar Merino-Alonso; Javier Calderon-Sanchez; Daniel Duque. 2023. The role of time integration in energy conservation in Smoothed Particle Hydrodynamics fluid dynamics simulations. European Journal of Mechanics-B/Fluids. Elsevier Masson. 97, pp.78-92.

5 **Artículo científico**. Simone Saettone; Enrique Molinelli Fernandez; Cristina Soriano Gómez; Leandro Antonio Saavedra Ynocente; Daniel Duque Campayo; Antonio Souto-Iglesias; Adolfo Maron Loureiro. 2022. A particle image velocimetry investigation of the flow field close to a heave plate for models of different scales. Applied Ocean Research. Elsevier. 129, pp.103387.

6 **Artículo científico**. Daniel Duque; Pep Español. 2020. An Assignment Procedure from Particles to Mesh that Preserves Field Values. International Journal of Computational Methods. World Scientific. 17-02, pp.1850130.

7 **Artículo científico**. J. Calderon-Sanchez; J.L. Cercos-Pita; D. Duque. 2019. A geometric formulation of the Shepard renormalization factor. Computers & Fluids. Elsevier. 183, pp.16-27.

8 **Artículo científico**. Daniel Duque Campayo. 2018. Particle method for phase separation on membranes. Microfluidics and Nanofluidics. Springer. 22-9, pp.95. ISSN 1613-4982. https://doi.org/10.1007/s10404-018-2115-8

9 **Artículo científico**. Daniel Duque; Pep Español. 2018. An Assignment Procedure from Particles to Mesh that Preserves Field Values. International Journal of Computational Methods. World Scientific. 17-2, pp.1850130-1850130. ISSN 0219-8762.

10 **Artículo científico**. J.L.Cercos-Pita; I.R.Cal; D. Duque; G. Sanjuán de Moreta. 2018. NASAL-Geom, a free upper respiratory tract 3D model reconstruction software. Computer Physics Communications. North-Holland. 223, pp.55-68. ISSN 0010-4655. https://doi.org/10.1016/j.cpc.2017.10.008

11 **Artículo científico**. Ismael R Cal; JL Cercos-Pita; D Duque. 2017. The incompressibility assumption in computational simulations of nasal airflow. Computer Methods in Biomechanics and Biomedical Engineering. Taylor & Francis. 20-8, pp.853-868. ISSN 1025-5842. https://doi.org/10.1080/10255842.2017.1307343

C.2. Congresos

1 Elena Anglada-Revenga; Ana Bezunartea-Barrio; Adolfo Maron-Loureiro; et al; Antonio Souto-Iglesias. Scale effects in heave plates: PIV investigation. International Conference on Offshore Mechanics and Arctic Engineering. American Society of Mechanical Engineers. 2020. Estados Unidos de América.

2 Daniel Duque Campayo; Javier Calderón Sánchez. Spectral particle simulations. The 13th SPHERIC International Workshop. SPHERIC, SPH rEsearch and engineeRing International Community. 2018. Irlanda.

3 Javier Calderón Sánchez; Daniel Duque Campayo; Jesús Gómez Goñi. Modeling the effect of phase change on LNG impact with open-source CFD. 38th International Conference on Ocean, Offshore & Arctic Engineering. The American Society of Mechanical Engineers. 2018. España.

C.3. Proyectos o líneas de investigación

1 **Proyecto**. Hydrodynamics of Motion Damping Devices for Floating Offshore Wind Turbines (FOWT-DAMP) RTI2018-096791-B-C21. CENTRO DE ACUSTICA APLICADA Y EVALUACION NO DESTRUCTIVA; Ministerio de Ciencia e Innovación. Universidades. Antonio Souto Iglesias. (Escuela Técnica Superior de Ingenieros Navales). 01/01/2019-31/12/2021.

2 **Proyecto**. Optimización del transporte de gas licuado en buques LNG mediante estudios sobre interacción fluido-estructura. Leo Miguel González Gutiérrez. (Universidad Politécnica de Madrid). 01/01/2015-31/12/2017.

Fecha del CVA	19-11-2024

Parte A. DATOS PERSONALES

Nombre y apellidos	Mª de las Nieves Lorenzo González		
DNI/NIE/pasaporte		Edad	50
Núm. identificación del investigador	Researcher ID	B-9924-2011	
	Código Orcid	orcid.org/0000-0001-5302-8312	

A.1. Situación profesional actual

Organismo	Universidad de Vigo		
Dpto./Centro	Física Aplicada / Facultad de Ciencias de Ourense		
Dirección	Edf. Manuel Martínez Risco 32004 Ourense		
Teléfono		correo electrónico	
Categoría profesional	Profesor Titular de Universidad	Fecha inicio	11-10-2011
Espec. cód. UNESCO	2299, 251007, 250206, 250121, 250299, 25091		
Palabras clave	Meteorología , Dinámica Atmosférica, Oceanografía Física, Interacción atmósfera-océano, modelos numéricos, cambio climático, Biometeorología, Agrometeorología, Sistemas no lineales		

A.2. Formación académica *(título, institución, fecha)*

Licenciatura/Grado/Doctorado	Universidad	Año
Física Electrónica	Santiago de Compostela	1995
Doctorado en Físicas	Santiago de Compostela	2000

A.3. Indicadores generales de calidad de la producción científica *(véanse instrucciones)*

4 sexenios de investigación el último concedido en junio de 2019.
Complemento de excelencia investigadora de la Xunta de Galicia
4 tesis dirigidas y una en proceso de elaboración

Parte B. RESUMEN LIBRE DEL CURRÍCULUM

Líneas de investigación:
Meteorología , Dinámica Atmosférica, Oceanografía Física, Interacción atmósfera-océano, modelos numéricos, cambio climático, Biometeorología, Sistemas no lineales

Formación
Formación en Física por la Universidad de Santiago de Compostela.
Licenciatura en física : Junio 1995
Tesis de licenciatura en física: Junio 1996
Beca Predoctoral en física: 1998-2000
Tesis doctoral europea en física: Julio 2000 Doctorado Europeo
Premio extraordinario de doctorado
Beca Postdoctoral en física: 2000-2001
Acreditación de la ANECA como PCD: Enero 2004
Contrato Ramón y Cajal en el área de Física de la Tierra convocatoria 2004 en la universidad de Vigo.
Satisfacción de los requisitos de calidad de la producción y actividad científico-tecnológica a los efectos del Programa I3

Actividad docente desempeñada:
- 3 Quinquenio de docencia (01/12/2004-31/05/2006) (01/06/2006-31/05/2011) y (01/06/2011-31/05/2016) (01/06/2016-31/05/2021)
- Complemento de reconocimiento a la labor docente de la Xunta de Galicia

[1] Desde el año 1998 hasta la actualidad he impartido docencia en el Área de Física de la Materia Condensada de la universidad de Santiago de Compostela y desde 2005 en el Área de Física de la Tierra de la Universidad de Vigo.
[2] Desde el año 2001 he impartido docencia en los programas de tercer ciclo de la Universidad de Santiago de Compostela y posteriormente desde 2006 en la Universidad de Vigo.
[3] 1 tesis dirigida en la Universidad de Santiago de Compostela; 3 tesis dirigidas en la Universidad de Vigo

[4] 2 DEA dirigidos en la Universidad de Santiago de Compostela. 1 tesis de Licenciatura dirigida en la Universidad de Vigo;
[5] 9 trabajos Fin de Máster dirigidos en la Universidad de Vigo
[6] 15 trabajos Fin de Grado dirigidos en la Universidad de Vigo
[7] 15 comunicaciones a congresos de docencia, EDULERN, CINDU, INTED

Actividad investigadora desempeñada:

- 4 sexenios de investigación
- Complemento de reconocimiento a la labor investigadora de la Xunta de Galicia
- Complemento de excelencia curricular de la Xunta de Galicia

[1] ***Participación en proyectos***: 34 proyectos de I+D financiados en convocatorias públicas en 5 de ellos como Investigador principal
[2] ***Publicaciones:***
Artículos: 62 artículos en revistas internacionales indexadas
Libros: 18 capítulos de libro
Editora de un libro: Oceanography of the Bay of Biscay, 396 páginas, ISBN: 84-689-6894-3.
Editora de la revista Docente/Investigadora Avances en Ciencias de la Tierra ISSN: 2172-9328
[3] ***Congresos:***
Más de 100 participaciones en congresos mayoritariamente internacionales.
Participación en la **organización** de 5 congresos internacionales y 1 nacional
[4] ***Contratos:***
1 contrato de investigación con la Empresa Financiadora: CETMAR., con C.I.F. nº G 36885853..
Duración:1/11/2007- 30/11/2008
[5] ***Censora de las revistas internacionales:***

Parte C. MÉRITOS MÁS RELEVANTES *(ordenados por tipología)*

C.1. Publicaciones desde 2014

1. A.M. Ramos, M. Sprenger, H. Wernli, A.M. Durán-Quesada, M.N. Lorenzo, L. Gimeno (2014) A new circulation type classification based upon Lagrangian air trajectories, Frontiers in Earth Science, 2:29. doi: 10.3389/feart.2014.00029 .
2. N. Casabella, M.N. Lorenzo, J.J. Taboada (2014) Trends of the Galician upwelling in the context of climate change, Journal of Sea Research, doi: 10.1016/j.seares.2014.01.013 .
3. Iglesias, M.N. Lorenzo, J.J. Taboada (2014) Seasonal Predictability of the East Atlantic Pattern from Sea Surface Temperatures , PLoS ONE, 9(1): e86439, doi: 10.1371/journal.pone.008643
4. A Picado, M.N. Lorenzo, I. Álvarez, M. deCastro, N. Vaz, J.M. Dias (2015) Upwelling and Chl-a spatiotemporal variability along the Galician coast: dependence on circulation weather types, International Journal of Climatology, doi: 10.1002/joc.4555 .
5. M.N. Lorenzo, A.M. Ramos, S. Brands (2015) Present and future climate conditions for winegrowing in Spain, Regional Environmental Change, pp 1-11, DOI 10.1007/s10113-015-0883-1 .
6. D. Royé, J.J. Taboada, A. Martí, M.N. Lorenzo (2015) Winter circulation weather types and hospital admissions for respiratory diseases in Galicia, Spain, International Journal of Biometeorology, Pages: 1-14, DOI: 10.1007/s00484-015-1047-1 .
7. I. Álvarez, M.N. Lorenzo, M. deCastro, M. Gómez-Gesteira (2017) Coastal upwelling trends under future warming scenariosfrom the CORDEX project along the Galician coast (NWIberian Peninsula), International Journal of Climatology, Vol. 37 Issue: 8 Pages: 3427–3438 DOI: 10.1002/joc.4927 .
8. I. Iglesias, M.N. Lorenzo, C. Lázaro, M.J. Fernandes, L. Bastos (2017) Sea level anomaly in the North Atlantic and seas around Europe: Long-term variability and response to North Atlantic teleconnection patterns, Science of The Total Environment, 609, 861-874, doi: 10.1016/j.scitotenv.2017.07.220 .
9. D. Garaboa-Paz, M.N. Lorenzo, V. Pérez-Muñuzuri (2017) Influence of finite-time Lyapunov exponents on winter precipitation over the Iberian Peninsula, Nonlinear Processes in Geophysics, 24, 227-235, doi:10.5194/npg-24-227-2017 .
10. D. Royé, M.N. Lorenzo, D. Rasilla, A. Martí (2018) Spatio-temporal variations of cloud fraction based on circulation types in the Iberian Peninsula, International Journal of Climatology, Vol. 39, 1716-1732 DOI: https://doi.org/10.1002/joc.5914 .
11. I. Álvarez, M.N. Lorenzo, M. deCastro, M. Gómez-Gesteira (2017) Coastal upwelling trends under future warming scenariosfrom the CORDEX project along the Galician coast (NWIberian

Peninsula), International Journal of Climatology, Vol. 37 Issue: 8 Pages: 3427–3438 DOI: 10.1002/joc.4927 .

12. I. Iglesias, M.N. Lorenzo, C. Lázaro, M.J. Fernandes, L. Bastos (2017) Sea level anomaly in the North Atlantic and seas around Europe: Long-term variability and response to North Atlantic teleconnection patterns, Science of The Total Environment, 609, 861-874, doi: 10.1016/j.scitotenv.2017.07.220 .
13. D. Garaboa-Paz, M.N. Lorenzo, V. Pérez-Muñuzuri (2017) Influence of finite-time Lyapunov exponents on winter precipitation over the Iberian Peninsula, Nonlinear Processes in Geophysics, 24, 227-235, doi:10.5194/npg-24-227-2017 .
14. D. Royé, M.N. Lorenzo, J. Martin-Vide (2018) Spatial–temporal patterns of cloud-to-ground lightning over the northwest Iberian Peninsula during the period 2010–2015, Natural Hazards, pp 1–28, DOI https://doi.org/10.1007/s11069-018-3228-9 .
15. J. Eiras-Barca, M.N. Lorenzo, J.J. Taboada, A. Robles, G. Miguez-Macho (2018) On the Relationship Between Atmospheric Rivers, Weather Types and Floods in Galicia (NW Spain), Natural Hazards and Earth System Sciences, doi.org/10.5194/nhess-2017-145 .
16. Álvarez, M.N. Lorenzo (2019) Changes in offshore wind power potential over the Mediterranean Sea using CORDEX projections, Regional Environmental Change, Pages 1-10 doi: https://doi.org/10.1007/s10113-018-1379-6 .
17. A. Piña-Rey, E. González-Fernández, Mª. Fernández-González, M.N. Lorenzo, F. J. Rodríguez-Rajo (2020) Climate Change Impacts Assessment on Wine-Growing Bioclimatic Transition Areas, Agriculture, Vol. 10 Issue: 12, 605; DOI: https://doi.org/10.3390/agriculture10120605 p: 1-21 .
18. M.N. Lorenzo, I. Álvarez (2020) Climate change patterns in precipitation over Spain using CORDEX projections for 2021–2050, Science of The Total Environment, 2020, Vol. 723, 138024 DOI: https://doi.org/10.1016/j.scitotenv.2020.138024 .
19. M.N. Lorenzo, A. Díaz-Poso, D. Royé (2021) Heatwave intensity on the Iberian Peninsula: Future climate projections, Atmospheric Research, Vol. 258, 105655; DOI: 10.1016/j.atmosres.2021.105655 .
20. M.N. Lorenzo, I. Álvarez, J.J. Taboada (2022) Drought evolution in the NW Iberian Peninsula over a 60 year period (1960–2020), Journal of Hydrology, Vol. 610, 127923. DOI: 10.1016/j.jhydrol.2022.127923 .
21. M.N. Lorenzo, I. Álvarez (2022) Future changes of hot extremes in Spain: towards warmer conditions, Natural Hazards, DOI: 10.1007/s11069-022-05306-x .
22. Díaz-Poso, M.N. Lorenzo, A. Martí, D. Royé (2023) Cold wave intensity on the Iberian Peninsula: Future climate projections, Atmospheric Research, Vol. 295, 107011 ; DOI: 10.1016/j.atmosres.2023.107011 .
23. A. Díaz-Poso, M.N. Lorenzo, D. Royé (2023) Spatio-temporal evolution of heat waves severity and expansion across the Iberian Peninsula and Balearic islands, Environmental Research, Vol. 217, 114864 DOI: 10.1016/j.envres.2022.114864 .
24. I. Álvarez, A. Díaz-Poso, M.N. Lorenzo, D. Royé (2024) Heat index historical trends and projections due to climate change in the Mediterranean basin based on CMIP6, Atmospheric Research, Vol. 308, 107512 ; DOI: 10.1016/j.atmosres.2024.107512
25. I. Álvarez, H. Pereira, M.N. Lorenzo, A. Picado, M.C. Sousa, J.J. Taboada, J.M. Dias (2024) Drought projections for the NW Iberian Peninsula under climate change, Climate Dynamics, DOI: 10.1007/s00382-023-07084-z .
26. M.N. Lorenzo, H. Pereira, I. Álvarez, J.M. Dias (2024) Standardized Precipitation Index (SPI) evolution over the Iberian Peninsula during the 21st century, Atmospheric Research, Vol. 297, 107132; DOI: 10.1016/j.atmosres.2023.107132
27. Enrique Aldao Pensado, Fernando Veiga López, Luis Miguel González de Santos, Higinio González Jorge, Elena Beatriz Martín Ortega, María de las Nieves Lorenzo González and María Inés Álvarez Fernández (2024) Dynamic Graph Advanced Air Mobility Trajectory Optimization Under Weather Forecast Uncertainty. Journal of Guidance, Control, and Dynamics. 2024-09. DOI: 10.2514/1.g007971
28. Isabel Cardoso, Isabel Iglesias, M. Nieves Fabiola N. Amorim, M. Joana Fernandes, Clara Lázaro (2024) Understanding Northeastern Tropical Atlantic Ocean Dynamics in Relation to Climate Indices. Advances in Space Research, https://doi.org/10.1016/j.asr.2024.11.032.

C.2. Proyectos investigación desde 2014

[1] Título del proyecto: Programa de consolidación e estructuración de unidades de investigación competitivas (Grupos de Referencia Competitiva).

Entidad financiadora: Xunta de Galicia; Entidades participantes: Universidad de Vigo
Duración: 01/01/2017- 30/11/2020 Cuantía: 280000 €
IP: R. Gómez Gesteira Código: ED431C 2017/64-GRC
[2] Project title: eXXperimenta en feminino. Funding entity: FECYT Fundación Española para la Ciencia y la Tecnologia, Duration, 01/09/2019 al 30/06/2020 extended (31 December 2020).
[3] Título del proyecto: RISC-ML, Prevención de riesgos de inundaciones y sequías en la cuenca internacional del Miño-Limia
Entidad financiadora: POCTEP Programa de Cooperación Transfronteriza Galicia- Norte de Portugal EU-FEDER
Duración, 3 años desde: 01/06/2017 hasta: 31/12/2021.
Investigador responsable: Ramón Gómez Gesteira
[4] Título del proyecto: MARRISK
Entidad financiadora: POCTEP Programa de Cooperación Transfronteriza Galicia- Norte de Portugal EU-FEDER
Duración, desde: 01/06/2017 hasta: 31/06/2021.
Investigador responsable: Ramón Gómez Gesteira
[5] Título del proyecto: eXXperimenta en feminino
Entidad financiadora: FECYT Fundación Española para la Ciencia y la Tecnología.
Duración, 1 años desde: 01/09/2019 hasta: 30/06/2020, extended 31/12/2020.
Investigador responsable: Mª de las Nieves Lorenzo González
[6] Título del proyecto: Consolidación e estruturación de unidades de investigación competitivas e outras accións de fomento nas universidades do Sistema universitario de Galicia.
Entidad financiadora: Xunta de Galicia; Entidades participantes: Universidad de Vigo
Duración: 01/01/2021 a 20/11/2024 Cuantía: 280.000,00 €
IP: María Teresa De Castro Rodríguez Código: GRC-ED431C 2021/44
[7] Título del proyecto: Movilidad aérea urbana segura y eficiente en vertipuertos basada en modelos CFD de micrometeorología. Referencia: PID2021-125060OB-I00 Entidad financiadora: Ministerio de Ciencia e Innovación. Programa: Proyectos I+D Generación de Conocimiento 2021
Duración desde: 01/01/2022 hasta: 31/12/2024.
Investigador responsable: Higinio González Jorge
[8] Título del proyecto coordinado: Riesgo de eventos meteorológicos e hidrológicos extremos en España: impactos, escenarios futuros y herramientas para mejorar la resiliencia y adaptación al cambio climático (EXMERISK). Coordinador: Sergio M. Vicente Serrano (IPE-CSIC) Título del Subproyecto: Título Sub-proyecto: Probabilidad de riesgo de fenómenos meteorológicos e hidrológicos extremos en España según las proyecciones futuras del CMIP6 en alta resolución espacial (ESMORGA; High spatial resolution hazard probability of extreme meteorological and hydrological events in Spain under future CMIP6 projections). Referencia
Entidad financiadora: Ministerio de Ciencia e Innovación (Proyectos Estratégicos Orientados a la Transición Ecológica y a la Transición Digital. Convocatoria 2021)
Duración desde: 01/12/2022 hasta: 30/11/2024.
Investigador responsable: Raquel-Olalla Nieto Muñiz y Luis Gimeno Presa
[9] Título del proyecto coordinado: Hacia la digitalización de las operaciones con sistemas aéreos no tripulados para el mantenimiento de parques eólicos offshore. EAGLE. Coordinador: Higinio González Jorge Referencia: TED2021-129756B-C31 Título del Subproyecto: Airspace and marine environment digitalization for the deployment of unmanned aircraft systems applied to offshore wind farms maintenance (EAGLE-ENVIRONMENT)
Entidad financiadora: Ministerio de Ciencia e Innovación (Proyectos Estratégicos Orientados a la Transición Ecológica y a la Transición Digital. Convocatoria 2021)
Duración desde: 01/12/2022 hasta: 30/11/2024.
Investigador responsable: Higinio González Jorge
[10] Título del proyecto: Sustainability and resilience for infrastructure and logistics networks. (SARIL)
Entidad financiadora: Unión Europea. Programa Horizon Europe. Call HORIZON-CL5-2022-D6-02. Referencia: 101103978.
Duración desde: 01/06/2023 hasta: 31/05/2026.
Investigador responsable: Higinio González Jorge

MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

CV date	18/11/2024

Part A. PERSONAL INFORMATION

First name	RAQUEL-OLALLA		
Family name	NIETO MUÑIZ		
Gender (*)	female	Birth date	10/08/1977
ID number			
e-mail		URL Web	
Open Researcher and Contributor ID (ORCID) -> orcid.org/0000-0002-8984-0959			

A.1. Current position

Position	CATEDRATICA de UNIVERSIDAD **3 sexenios investigación**		
Initial date	2022		
Institution	UNIVERSITY OF VIGO		
Department/Center	Applied Physics / Faculty of Science		
Country	SPAIN	Phone	
Key words	Atmospheric Physics, Hydrological Cycle, Climate Diagnosis		

A.2. Previous positions

Period	Position/Institution/Country/Interruption cause
01/02/2001-30/06/2001	Research staff at UVigo, Spain / Change of activity
22/07/2002-15/10/2003	Research staff at Univ Santiago de Compostela, Spain / Change of activity
16/10/2003-28/12/2006	Research staff at UVigo, Spain / Promotion to Postdoctoral research
29/12/2006-28/12/2011	PostDoc Parga Pondal (eq. RyC), UVigo, Spain / Promotion to Associated Professor
2006-2008	PostDoc University of Lisbon, Portugal
29/12/2011-13/03/2012	Titular Interino, UVigo, Spain / Promotion to Associated Professor
14/03/2012-01/08/2022	Titular UVigo, Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Degree in Physics	Univ. of Vigo, Spain	2000
Master Education CAP	Univ. of Vigo, Spain	2001
PhD Courses in Applied Physics	Univ. of Vigo, Spain	2002
PhD in Physics	Univ. of Vigo, Spain	2005

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

RNieto has a PhD in Atmospheric Physics (2005), and is currently associated professor in the area of Earth-Physics at the UVigo (2012). She belongs to the Environmental Physics Laboratory (EphysLab), a "research excellence" group by Xunta-Galicia, integrated in one of its Singular Groups. The group is also an CSIC Associated Unit.
Her scientific, teaching and professional career has always been linked to atmospheric and climate sciences, to climate change and its impacts, and in recent years to the consequences of climate extremes on human health.

During her post-doctoral period, she held a "Parga Pondal" research-post for 4 years (autonomic Ramón y Cajal). She spent 3 years (2006-08) at the Univ. of Lisbon in the Geophysics group (Portugal). During 2015-18 she was a Distinguished Visiting Researcher at the Univ. of Sao Paulo, Brazil, joining the IAG, under the "Ciencias sem Fronteiras" programme by the CNPq/MCTI Brazil Government.

She is internationally recognised in two lines of research that form part of her scientific career, and for which **she has been awarded by the two most prestigious European geophysical and meteorological societies**: the **European Meteorological Society** (EMS) and the **European Geophysical Union** (EGU).

In 2009 she was awarded the **EMS Young Scientist Award** for the publication **"Identification and climatology of Cut-off Lows near the Tropopause"** in Annals of the NY Academy of Science. This article and those derived from her PhD thesis about this topic are **the most cited articles on these meteorological structures worldwide**.

In the last decade, her contributions to the **knowledge of the water cycle in the atmosphere** have also achieved special international notoriety.In 2010 she published the article "**On the origin of Continental Precipitation**" in GRL, which had an extraordinary impact. It was **highlighted** by the journal itself in EOS –AGU journal- and is considered **"highly cited"**. It identifies the regions where precipitation is generated from its main global moisture sources. The results are widely **used in basic university textbooks** in Meteorology & Climatology, **and** it is an **entry in the Encyclopedia of Sustainability Science & Technology**. **This research line is a succession of nearly 120 papers identifying the main global and regional sources and sinks of moisture, and the mechanisms that transport this moisture to land**. Following this, the AGU invited her (& co-authors) to **synthesise the state of knowledge on moisture sources for precipitation** in an article published in 2012 in **Reviews of Geophysics** entitled "**Oceanic and Terrestrial sources of continental precipitation**", **"highly cited"**

In 2011 she received the **EGU Outstanding Young Scientist Award for her contribution to atmospheric sciences in understanding the atmospheric branch of the hydrological cycle**, in particular for her contributions **in determining the sources of moisture that generate continental precipitation**.

The importance of her research has led her to receive invitations from the most prestigious review journals to synthesise advances on the hydrological cycle (Reviews of Geophysics, Annual Reviews of Environment & Resources, Earth Science Reviews, WIRES Climate Change, WIRES Water and Nature Reviews).

A key consideration within their studies is the **analysis of the role of major moisture transport mechanisms, such as atmospheric rivers and low-level jets**. The results of several papers were compiled (by invitation) in the prestigious **Annual Reviews of Environment & Resources** in 2016 under the title "**Major Mechanisms of Atmospheric Moisture Transport and Their Role in Extreme Precipitation Events**", also considered **"highly cited"** by WoS.

She is currently researching **fundamental aspects of the hydrological cycle and its climatic implications**, addressing key questions such as (i) whether climate change implies an increase in oceanic versus terrestrial precipitation (published in Nature npj Climate & Atmospheric Sciences 2020, entitled "The growing importance of oceanic moisture sources for continental precipitation"), (ii) whether atmospheric rivers are transporting increasing amounts of moisture and whether this is consistent with basic thermodynamic principles linked to climate change (published in Nature Communications 2020 "Significant increase of global anomalous moisture uptake feeding landfalling ARs"), or (iii) the role of atmospheric water vapour residence time as a metric of the global hydrological cycle and its implications for the study of climate change (Nature Reviews Earth & Environment 2021 invited paper: "The Residence Time of Water Vapour in the Atmosphere"). The residence time of water vapour is a little-studied indicator of climate change, but from now on it will be a determining factor in the IPCC's considerations.

Part C. RELEVANT MERITS *(sorted by typology)*
C.1. Publications (More than 170 SCI papers): full list in https://ephyslab.uvigo.es/en/dra-raquel-nieto/

L. Gimeno-Sotelo, R. Sorí, **R. Nieto,** S. Vicente-Serrano, L. Gimeno (2024) Unravelling the origin of the atmospheric moisture deficit that leads to droughts, Nature Water, DOI: 10.1038/s44221-023-00192-4

A. Pérez-Alarcón, P. Coll-Hidalgo, J.C. Fernández-Álvarez, R.M. Trigo, **R. Nieto,** L. Gimeno (2023) Impacts of tropical cyclones on the global water budget, npj Climate and Atmospheric Science, doi:10.1038/s41612-023-00546-5

J.C. Fernández-Álvarez, A. Pérez-Alarcón, J. Eiras-Barca, S. Rahimi, **R. Nieto,** L. Gimeno (2023) Projected changes in atmospheric moisture transport contributions associated with climate warming in the North Atlantic, Nature Communications, Vol. 14, 6476 ; DOI: 10.1038/s41467-023-41915-1

L. Gimeno, J. Eiras-Barca, A.M. Durán-Quesada, F. Domínguez, R. van der Ent, H. Sodemann, R. Sánchez-Murillo, **R. Nieto**, J. W. Kirchner (2021) The residence time of water vapour in the atmosphere, Nature Reviews Earth & Environment, doi: 10.1038/s43017-021-00181-9 *BY INVITATION*

I.Algarra, R. Nieto, et al. (2020) Significant increase of global anomalous moisture uptake feeding landfalling Atmospheric Rivers, Nature Communications; 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, npj Climate and Atmospheric Science 3, 27 ; https://doi.org/10.1038/s41612-020-00133-y

L. Gimeno, M. Vázquez, J. Eiras-Barca, R. Sorí, M. Stojanovic, I. Algarra, **R. Nieto**, et al. (2020) Recent progress on the sources of continental precipitation as revealed by moisture transport analysis, Earth Science Reviews doi:https://doi.org/10.1016/j.earscirev.2019.103070

R. Nieto, L. Gimeno (2019) A database of optimal integration times for Lagrangian studies of atmosphericmoisture sources and sinks, Scientific Data 6, https://doi.org/10.1038/s41597-019-0068-8

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-Climate Change 10(4), 1-12; https:// doi.org/10.1002/wcc.588 *REVIEW BY INVITATION*

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, Vol. 41 *BY INVITATION &. PREMIO CAMPUS DEL AGUA.*

R. Nieto, R. Castillo, A. Drumond, L. Gimeno (2014) The modulation of oceanic moisture transport by the hemispheric annular modes. Frontiers in Earth Science 2(11), 1-12, doi: 10.3389/feart.2014.00011

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, A. Drumond, **R. Nieto**, R. Trigo, and A. Stohl (2010), On the origin of continental precipitation, Geophys. Res. Lett., doi:10.1029/2010GL043712 *HIGHLITED IN EOS (ISI highly cited article)*

C.2. Congress (more than 230 presentations in international congress)

More than 230 presentations in international congress AMS, AGU, EGU, EMS, etc.

Organization of international conferences:
2004 First International School in Advances Climate Studies. Ourense, Spain. Role: Organizing Committee
2007 Seminario Precipitación y fenómenos meteorológicos asociados en el Cono Sur Americano, Ourense, Spain. Role: Organizing Committee
2016 8th EGU Leonardo Topical Conference Series on the hydrological cycle: "From evaporation to precipitation: the atmospheric moisture transport" in Ourense, Spain. Role: Organizing Committee
2017 First electronic conference on the hydrological cycle. Role: Organizing Committee

C.3. Research projects

SETESTRELO: High-resolution assessment of North Atlantic moisture transport in current climate and CMIP-6 future projections. IP: Raquel Nieto & Luis Gimeno. Funded by MICIN. PID2021-122314OB-I00. 2022 – 2025. (163.350,00) Role in the project: IP

ESMORGA: LAGRangian analysis of the Impact on the global hydrological cycle of the Major Mechanisms of Atmospheric Moisture Transport). IP: Raquel Nieto & Luis Gimeno. Funded by MICIN. TED2021-132088B-I00. 01/12/2022 – 31/12/2024. (135000 €) Role in the project: IP

LAGRIMA: LAGRangian analysis of the Impact on the global hydrological cycle of the Major Mechanisms of Atmospheric Moisture Transport). IP: Raquel Nieto & Luis Gimeno. Funded by MINECO. RTI2018-095772-B-I00. 01/01/2019 – 30/09/2022. (84.700 €) Role in the project: IP

EVOCAR: The atmosphere moisture transport, the bridge between evaporation and precipitation in the) IP: Luis Gimeno & Raquel Nieto. Funded by MINECO CGL2015-65141-R. 01/01/2016 – 30/09/2019 (146.410,00 €). Role in the project: IP

INDROFLOOD: Improving Drought and Flood Early Warning, Forecasting and Mitigation using real-time hydroclimatic indicators. Coordinator S Vicente-Serrano. Funded by Water JPI -WaterWorks 2014 Horizon 2020. PCIN-2015-243. Participating entities: CSIC, Coordinator (Spain). Univ. de Lisboa (FFCUL) Partner (Portugal). Univ. of Cape Town Partner (South AfricA). National Meteorological Adm. Romania, Univ. Tartu Partner (Estonia). Research Inst Field Crops "Selectia" Partner (Moldova). Farisa Partner (Spain). UVIGO Partner (Spain). 01/05/2016 – 31/12/2019 100.000,00 € (Total: 1.086.190,00 €). Role in the project: Research Member.

THIS: The role of the moisture transport in the extreme precipitation, flooding and droughts in the European Atlantic coasts. IP: Raquel Nieto. Funded by Xunta de Galicia. Conselleria de Educación. EM2014/043. 14/05/2014 – 14/05/2017 (93.000,00 €) Role in the project: IP

ACPCA: Arctic Climate Processes Linked through the Circulation of the Atmosphere. IP Luis Gimeno. Funded by ERAnet.RUS" programme within FP7. 01/01/2013 - 30/09/2014. PRI-PIMERU-2011-1429. 01/09/2012 – 01/03/2015 (40.000 €) Role in the project: Participant

TRAMO: Transport of moisture in the Atmosphere. IP: Raquel Nieto. Funded by MINECO. 01/01/2013 - 31/12/2015. CGL2012-35485. 01/01/2013 - 31/12/2015 (93.000 €) Role: IP.

STORMEx: Mid-Latitude North Atlantic Extreme Storms Variability: Diagnosis, Modelling Dynamical Processes and Related Impacts on Iberia. IP Ricardo Trigo. Funded by FCT Portugal. 01/03/2012 – 31/08/2015. (149.000 €) Role in the project: Participant.

CHEGA: Dynamical characterizaction of the Hidrological Atmospheric Cycle for Galicia (Spain). Funded by Xunta de Galicia. Conselleria de Educación. 01/01/09-31/12/11. IP: Raquel Nieto.

MSM. Dynamical identification of moisture sources in the Mediterranean and analysis of their variability IP: Luis Gimeno. Funded by MICINN CLI-CGL2008-05968-C02-02. 01/01/09 - 31/12/12 (135.000 €). Role in the project: Participant

CIRCE: Climate Change and Impact Research: the Mediterranean Environment Diagnosis and modelling of the moisture sources in the Mediterranean region. IP: Antonio Navarra. Funded by the European Union FP6 (59 Universities or Research centres). 01/04/2007- 30/06/2011 (13.730.066 €). Role in the project: Participant

C.4. Contracts, technological or transfer merits

- Name of contract: ESA CCI Project: EUROPEAN SPACE AGENCY, CLIMATE CHANGE INITIATIVE – WATER VAPOR. Code/Reference: AO/1-9041/17/I-NB. IP Luis Gimeno. Funding entity: ESA (European Space Agency) - Univ Reading. Participating entities: UVIGO, Univ Reading (UK), DWD (Germany), Telespazio VEGA (UK), Brockmann consult (Germany), Spectral Earth (Germany), STFC Rutherford Appleton Laboratory (UK), ECCC (Canada), (KIT, Germany), Univ Leicester (UK), BIRA-IASB(Belgium), Univ Versailles (France). Start-End date: 01/05/2020 – 30/09/2021. Incomes: 36.237,00 €. Role in the contract: Research Member.

- 2018 Arquimedes Award, Spanish Science Ministry to the best research advisor, Student Luis Gimeno-Sotelo. Tittle of the work A new pattern of the moisture transport for precipitation related to the drastic decline in Arctic sea ice extent.

- Name of the contract: RISC Floods and Drought risks in the Miño-Limia basins Code/Reference: 0034_RISC_ML_6_E (IINTERREG-POCTEP 2014-2020). IP M. Gómez-Gesteira. Funding entity: EU FEDER. Participating entities: Confederación Hidrográfica Miño-Sil, IPMA, IP(APA), UVIGO, Univ Porto (FEUP). Start-End date: 01/06/2017 – 31/12/2021. Incomes: 449.821,87 € (Total: 1.751.462,56 €). Role in the project: Participant

- Name of the contract: MarRISK: Adaptation to climate change of the coast of Galicia and north of Portugal. Code/Reference: 0262_MARRISK_1_E (IINTERREG-POCTEP 2014-2020). IP: M. Gómez-Gesteira. Funding entity: EU FEDER. Participating entities: Cons Medio Ambiente e Ordenación do Territorio. Xunta de Galicia, Centro Tec del Mar Inst tecnológico para el control del medio marino de Galicia, Agencia Estatal CSIC, IPMA, Instituto de Investigaciones Marinas, UVigo, Centro Interdisciplinar de Investigação Marinha e Ambiental, Universidade do Minho, IEO, Univ Aveiro, Agência Portuguesa do Ambiente, Inst Engenharia de Sistemas e Computadores, Tecnologia e Ciência, Instituto Hidrográfic. Start-End date: 01/06/2017 – 30/06/2021. Incomes: 477.290,62 € (Total: 2.217.787.86 €) Role in the project: Participant

MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

CV date	18 nov 2024

First name	**José Manuel**		
Family name	**Vaquero**		
Gender (*)	**Male**	Birth date (dd/mm/yyyy)	**28/11/1973**
Social Security, Passport, ID number			
e-mail			
Open Researcher and Contributor ID (ORCID) (*)		**0000-0002-8754-1509**	

(*) Mandatory

A.1. Current position

Position	**Catedrático (Full Professor)**		
Initial date	**16 October 2019**		
Institution	**Universidad de Extremadura**		
Department/Center	**Física**	**Facultad de Ciencias**	
Country	**Spain**	Teleph. Number	
Key words	**Historical Climatology, Space Climate**		
Recognized research six-year periods (“sexenios”)	**Four research six-year periods in 1999-2004, 2005-2010, 2011-2016 and 2017-2022**		

A.2. Previous positions (research activity interuptions, art. 14.2.b)

Period	Position/Institution/Country/Interruption cause
01/03/1999 – 31/08/2000	Titulado Superior/Dpto. Matemáticas/F.Ciencias/UEx
01/09/2000 – 15/04/2001	Profesor de física/Colegio Diocesano, Badajoz
16/04/2001 – 11/11/2001	Ayudante EU/Dpto. Física/Esc. Politécnica/UEx
12/11/2001 – 31/12/2005	Ayudante Facultad/ Dpto. Física/Esc. Politécnica/UEx
01/01/2006 – 15/04/2010	Profesor CD/Dpto. Física Aplicada/Esc. Politécnica/UEx
16/04/2010 – 15/10/2019	TU/Dpto. Física/Centro Universitario Mérida/UEx
16/10/2019 – 31/08/2022	CU/ Dpto. Física/Centro Universitario Mérida/UEx

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licenciado en Ciencias Físicas	Universidad de Extremadura/Spain	1997
Doctor en Ciencias	Universidad de Extremadura/Spain	2002

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

José M. Vaquero (Badajoz, 1973) is currently Professor of Earth Physics at the Physics Department of the University of Extremadura (UEx). His main lines of research focus on the reconstruction of the Earth's climate and solar activity during the last centuries from historical sources.

After finishing his undergraduate studies in Physics, he began his doctoral thesis on an episode in the history of physics in Spain. After a brief period working in the private company, he began his stage as a university professor in 2001. In the first months of work at the University, he took a radical turn in his initial lines of research, beginning to work on the reconstruction of space and terrestrial climate, new topics in the UEx. He soon achieved results of interest to the international scientific community, such as his series of sunspots observed with the naked eye over the last twenty-two centuries (GRL, 2002).
In 2006 he obtained his first project as principal investigator and a stage of development of his research lines began. In 2009, together with Manuel Vázquez, he published the book "The Sun Recorded Through History" in Springer, the well-known scientific publisher, highlighting the enormous interest of historical documents to know the solar activity of the last centuries, the main natural forcing of the Earth's climate.
Thanks to the information contained in ancient manuscripts and printed matter, he has achieved some remarkable achievements for the knowledge of various natural phenomena. Two examples can be mentioned. On the one hand, his team has managed to establish some characteristics of the Maunder minimum (the period in which hardly any sunspots were seen on the Sun from 1645 to 1715), such as the abrupt transition from normal solar activity to great minimum (Vaquero et al., 2011, Astrophys. J. Lett.) or the presence of the solar cycle during this period (Vaquero et al., 2015, Astron. Astrophys.). On the other hand, nobody thought that a "hurricane" (a tropical system) could reach the Iberian Peninsula until Hurricane Vince 2005 did (already very weakened). Was Hurricane Vince 2005 an exception? José M. Vaquero's team found a clear historical analog of the 2005 Vince that occurred in 1842 (Vaquero et al, 2008, BAMS) and others that need to be confirmed. He has also led a line of research on the climate of the last centuries in the Extremadura region. It is worth highlighting the use of documentation from the old State of Feria that has allowed the establishment of temperature and precipitation indexes since 1750 (Fernández-Fernández, Clim. Change, 2014, 2015, 2017).
The works of José M. Vaquero (239 articles in journals indexed in the SCI) have shown the importance of rescuing the historical observations made by scientists and scholars of the past. Some of his works have led the scientific community to promote a general review of the best-known solar activity index (Sunspot Number), in collaboration with several foreign institutions, which is having important implications for solar physics, solar-terrestrial physics and geosciences. In fact, his research was highlighted in the cover of the journal "Nature Astronomy" (2019 March issue).
His contributions to society can also be highlighted, especially in scientific dissemination since he has published several books and has participated in innumerable talks and activities. Additionally, he is a vocational physics teacher. He has supervised 7 doctoral theses and 43 final projects for bachelor's and master's degrees. He won the "Teaching Excellence Award from the University of Extremadura 2017".
He is currently Editor of the journal "Climate". He has been the Guest Editor of a special issue of the journal "Solar Physics" (Volume 291, Issue 9, 2016) devoted to the topic "Sunspot Number Recalibration". In addition, he has reviewed 120 manuscripts from 56 different journals and has been an evaluator of three agencies: ANEP (5 projects and 23 CVs), DEVA (31 CVs), and the Secretary of Higher Education, Science, Technology and Innovation of Ecuador (1 project).
Finally, different organization and management of R&D activities can be pointed out. He was Chair of the Local Organizer Committee of the "VI Reunión Española de Física Solar y Heliosférica" conference (Mérida, Spain, 2017). Also, he is the representative of the UEx in the international Consortium CREDO (Cosmic Ray Extremely Distributed Observatory). Moreover, he is a member of the AGU 2020 and 2021 Ambassador Award Committees.

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

1. N. Bravo-Paredes, M.C. Gallego, J.M. Vaquero, R.M. Trigo (2021) "The catastrophic floods in the Guadiana River basin since AD1500" Science of the Total Environment 797, 149141. https://doi.org/10.1016/j.scitotenv.2021.149141

2. J. González-Cao, D. Fernández-Nóvoa, O. García-Feal, J.R. Figueira, J.M. Vaquero, R.M. Trigo, M. Gómez-Gesteira (2021) “Numerical reconstruction of historical extreme floods: The Badajoz event of 1876” Journal of Hydrology 599, 126292. https://doi.org/10.1016/j.jhydrol.2021.126292
3. A. Hernández, M. Cachão, P. Sousa, R.M. Trigo, J. Luterbacher, J.M. Vaquero, M.C. Freitas (2021) “External forcing mechanisms controlling the North Atlantic coastal upwelling regime during the mid-Holocene” Geology 49, 433–437. https://doi.org/10.1130/G48112.1
4. R. Arlt, J.M. Vaquero (2020) “Historical sunspot records” Living Reviews in Solar Physics 17, 1. https://doi.org/10.1007/s41116-020-0023-y
5. A. Muñoz-Jaramillo, J.M. Vaquero (2019) “Visualization of the challenges and limitations of the long-term sunspot number record” Nature Astronomy 3, 205-211. https://doi.org/10.1038/s41550-018-0638-2
6. F.J. Acero, J.M. Vaquero, M.C. Gallego, and J.A. García (2018) “A limit for the values of the Dst geomagnetic index” Geophysical Research Letters 45, 9435-9440. https://doi.org/10.1029/2018GL079676
7. G. Chiodo, R. García-Herrera, N. Calvo, J.M. Vaquero and J.A. Añel (2016) "The impact of a future solar minimum under a climate change scenario" Environmental Research Letters 11, 034015. https://doi.org/10.1088/1748-9326/11/3/034015
8. M.I. Fernández-Fernández, M.C. Gallego, F. Domínguez-Castro, R.M. Trigo, J.M. Vaquero (2015) "The climate in Zafra from 1750 to 1840: Precipitation" Climatic Change 129, 267-280. https://doi.org/10.1007/s10584-014-1315-9
9. J.M. Vaquero, G.A. Kovaltsov, I.G. Usoskin, V.M.S. Carrasco, and M.C. Gallego (2015) “Level and length of cyclic solar activity during the Maunder minimum as deduced from the active day statistics” Astronomy & Astrophysics 577, A71. https://doi.org/10.1051/0004-6361/201525962
10. F. Clette, L. Svalgaard, J.M. Vaquero and E.W. Cliver (2014) "Revisiting the Sunspot Number. A 400-year perspective on the solar cycle" Space Science Reviews 186, 35-103. https://doi.org/10.1007/s11214-014-0074-2

C.2. Congress

I was “Invited Speaker” in several scientific meeting, including:
1. “4th Sunspot Workshop”, Locarno, Switzerland, 19-23 May 2014.
2. “26th General Assembly of the International Union of Geodesy and Geophysics (IUGG)”, Prague, Czech Republic, June 22 – July 2, 2015.
3. “Symposium Space Climate 6”, Levi, Finnish Lapland, 4-7 April 2016.
4. “XII Reunión científica de la Sociedad Española de Astronomía”, Bilbao, 18-22 July 2016.
5. “VIII Simposio Extremeño de Estudios Clásicos”, Cáceres, 5-7 October 2017.
6. “EGU General Assembly”, Vienna, 8-13 April 2018.
7. “XXXth General Assembly of the International Astronomical Union”, Vienna, 20-31 August 2018.
8. “IMDROFLOOD: International Workshop on Hydroclimatic Extremes and Impacts at Catchment to Regional Scales”, Lisbon, 18 June 2019.
9 “XXXVII Reunión Bienal de la Real Sociedad Española de Física”, Zaragoza, 15-19 July 2019.
10. “4th Dynamo Thinkshop”, Department of Physics of the Università degli Studi di Roma Tor Vergata, Italy. 25 - 26 November 2019.

C.3. Research projects

- “Avances en la reconstrucción de la actividad solar”. Plan Nacional de I+D+I. (AYA2008-04864/AYA). 2009-2011. IP: José M. Vaquero
- “Caracterización del clima de la península ibérica durante el periodo 1750-1850 (Salvá-Sinobas)” (Nº de Identificación del expediente: 200800050083542). Acción Estratégica del Ministerio de Medio ambiente y Medio Rural y Marino. 2008-2011. IP: Ricardo García Herrera (coordinated) y José M. Vaquero (UEx Team)
- “Recuperación y análisis de datos para el estudio del Clima Espacial en los últimos siglos” Plan Nacional de I+D+I. (AYA2011-25945). 2012-2014. IP: José M. Vaquero

- COST Action ES1005 TOSCA - Towards a more complete assessment of the impact of solar variability on the Earth's climate. Junio 2011 - Mayo 2015. IPs (Chairs): T. Dudok de Wit, K. Matthes. Spanish MC members: José M. Vaquero (UEx) y Gabriel Chiodo (UCM)
- "Grandes Eventos de Máximos y Mínimos de Actividad Solar" Plan Nacional de I+D+I. (AYA2014-57556-P). 2015-2017. IP: José M. Vaquero
- "Caracterización del clima del pasado reciente usando archivos y bibliotecas de Extremadura" Junta de Extremadura - FEDER (IB16127). Jun 2017- Jun 2020. IP: José M.Vaquero.
- "Recalibration of the Sunspot Number Series" International Teams in Space Science. International Space Science Institute. 2018-2019. IP: F. Clette (Belgium) and M. Owens (UK).
- "Eventos de interés para las ciencias de la Tierra y del Espacio en Extremadura a partir de sus documentos y prensa histórica" Junta de Extremadura - FEDER (IB20080). Jun 2021- Jun 2024. IP: José M.Vaquero and M.C. Gallego.

C.4. Contracts, technological or transfer merits

Contracts

1.-Title of the contract: Creation and maintenance of a network for measuring ultraviolet solar radiation in Extremadura
Funding entity: Ministry of Health and Consumption of the Junta de Extremadura
Duration: 01/01/2007 - 12/31/2007 Responsible Researcher: Antonio Serrano Pérez
Number of researchers: 6 TOTAL PRICE OF THE PROJECT: 36 000 euros

2.- Contract title: Creation and maintenance of a network for measuring ultraviolet solar radiation in Extremadura
Funding entity: Extremadura Health Service of the Junta de Extremadura
Duration: 01/01/2008 - 12/31/2008 Responsible Researcher: Antonio Serrano Pérez
Number of researchers: 6 TOTAL PRICE OF THE PROJECT: 36 000 euros

3.- Contract title: Maintenance and monitoring of the ultraviolet solar radiation measurement network in Extremadura
Funding entity: Extremadura Health Service of the Junta de Extremadura
Duration: 01/01/2009 - 12/31/2009 Responsible Researcher: Antonio Serrano Pérez
Number of researchers: 6 TOTAL PRICE OF THE PROJECT: 36 000 euros

Industrial property

- "Device for measuring polar coordinates of sunspots from images of the solar disk" Inventor: José Manuel Vaquero Martínez; Application No.: ES 1 078 339 U; Priority country: Spain; Priority date: 12/04/2012; Holder entity: University of Extremadura.
- "Monocular glasses to observe eclipses" Inventors: V.M.S. Carrasco, F.J. Alonso Romero and J.M. Vaquero; Application No.: ES 2 607 678 A1; Priority country: Spain; Priority date: 04/03/2017; Holder entity: University of Extremadura.
- "Micrometeorite recovery device" Inventors: J.M. Vaquero, M.C. Gallego and I. Tovar; Application No.: ES 1 280 166 U; Priority country: Spain; Priority date: 27/10/2021; Holder entity: University of Extremadura.

Popular Books

- J.M. Vaquero (2003) *Galileo. La nueva física* (Madrid: Nivola Libros y Ediciones, 157 pp.) [I.S.B.N. 84-95599-74-0].
- J.M. Vaquero (2020) *Guía de Relojes de Sol de Extremadura* (Mérida: Junta de Extremadura) [I.S.B.N. 978-84-09-23907-8].
- C.F. Gauss (2021) *Teoría General del Magnetismo Terrestre*, introducción, traducción y notas por J.M. Vaquero (Madrid: Los libros de la Catarata). [I.S.B.N. 978-84-1352-1640].

Fecha del CVA	18/11/2024

Parte A. DATOS PERSONALES

Nombre	David		
Apellidos	Gallego Puyol		
Sexo	Hombre	Fecha de Nacimiento	21/09/1972
DNI/NIE/Pasaporte			
URL Web			
Dirección Email			
Open Researcher and Contributor ID (ORCID)	0000-0002-2082-4125		

A.1. Situación profesional actual

Puesto	Catedrático de Universidad		
Fecha inicio	2023		
Organismo / Institución	Universidad Pablo de Olavide		
Departamento / Centro	Sistemas Físicos, Químicos y Naturales / Facultad de Ciencias Experimentales		
País	España	Teléfono	
Palabras clave	Meteorología; Climatología		

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Física de la Tierra II, Astronomía y Astrofísica	Universidad Complutense de Madrid	2001
Licenciado en Ciencias Físicas Especialidad Física de la Tierra y del Cosmos	Universidad Complutense de Madrid	1998

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con "peer review" y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

1 **Artículo científico**. Cristina Peña-Ortiz; Nuria Pilar Plaza-Martin; David Gallego; Felix Ploeger. 2024. Quasi-biennial oscillation modulation of stratospheric water vapour in the Asian monsoon. Atmospheric Chemistry and Physics. 24, pp.5457-5478. https://doi.org/10.5194/acp-24-5457-2024

2 **Artículo científico**. Rodrigo Muñoz-Sanchez; Paulina Ordoñez; David Gallego; Carlos Ochoa-Moya. 2023. An objective procedure for rainy season onset and withdrawal dates over the Mexico Valley Basin. Theoretical and Applied Climatology. https://doi.org/10.1007/s00704-023-04714-8

3 **Artículo científico**. AM Burgdorf; S Bronnimann; G Adamson; et al; I Vega. 2023. DOCU-CLIM: A global documentary climate dataset for climate reconstructions. Scientific Data. Nature. https://doi.org/10.1038/s41597-023-02303-y

4 **Artículo científico**. Veronika Huber; Cristina Peña-Ortiz; David Gallego; Stefan Lange; Francesco Sera. 2022. Evidence of rapid adaptation integrated into projections of temperature-related excess mortality. Environmental Research Letters. 17. https://doi.org/10.1088/1748-9326/ac5dee

5 **Artículo científico**. David Gallego; Ricardo García-Herrera; Elsa Mohino; Teresa Losada; Belén Rodríguez-Fonseca. 2022. Secular Variability of the Upwelling at the Canaries Latitude: An Instrumental Approach. Journal of Geophysical Research OCEANS. Wiley. 127-3. https://doi.org/10.1029/2021JC018039

6 **Artículo científico**. David Gallego; Ricardo García-Herrera; Teresa Losada; Elsa Mohino; Belén Rodríguez-Fonseca. 2021. A Shift in the Wind Regime of the Southern End of the Canary Upwelling System at the Turn of the 20th Century. Journal of Geophysical Research OCEANS. Wiley. 126-5, pp.1-17. https://doi.org/10.1029/2020JC017093

7 **Artículo científico**. Inmaculada Vega; Pedro Ribera; David Gallego. 2020. Characteristics of the Onset, Withdrawal, and Breaks of the Western North Pacific Summer Monsoon in the 1949–2014 Period. Journal of Climate. 33, pp.7371-7389. https://doi.org/10.1175/JCLI-D-19-0734.1

8 **Artículo científico**. Pedro Ribera; Paulina Ordoñez-Pérez; David Gallego; Cristina Peña-Ortiz. 2020. Internal variability and external forcings in the ocean–atmosphere multidecadal oscillator over the North Atlantic. Climate Dynamics. 55, pp.909-923. https://doi.org/10.1007/s00382-020-05300-8

9 **Artículo científico**. Paula Hidalgo; David Gallego. 2019. A historical climatology of the easterly winds in the strait of Gibraltar. Atmosfera. 33-3, pp.181-195. https://doi.org/10.20937/ATM.2019.32.03.02

10 **Artículo científico**. Paulina Ordoñez; Raquel Nieto; Luis Gimeno; Pedro Ribera; David Gallego; Carlos Abraham Ochoa; Arturo Ignacio Quintanar. 2019. Climatological moisture sources for the Western North American Monsoon through a Lagrangian approach: their influence on precipitation intensity. Earth System Dynamics. 10, pp.59-72. https://doi.org/10.5194/esd-10-59-2019

11 **Artículo científico**. Francisco de Paula Gomez; Ricardo Garcia-Herrera; David Gallego; Cristina Peña-Ortiz; Inmaculada Vega; Pedro Ribera. 2019. Long term variability of the northerly winds over the Eastern Mediterranean as seen from historical wind observations. Global and Planetary Change. 172, pp.355-364. https://doi.org/10.1016/j.gloplacha.2018.10.008

12 **Artículo científico**. David Gallego; Ricardo Garcia-Herrera; Francisco de Paula Gómez; Paulina Ordoñez; Pedro Ribera. 2019. Tracking the moisture transport from the Pacific towards Central and northern South America since the late 19th century. Earth System Dynamics. 10, pp.319-331. https://doi.org/10.5194/esd-10-319-2019

13 **Artículo científico**. Alicia Troncoso; Pedro Ribera; Gualberto Asencio; Inmaculada Vega; David Gallego. 2018. Imbalanced Classification Techniques for Monsoon Forecasting based on a new climatic time series. Environmental Modelling and Software. https://doi.org/10.1016/j.envsoft.2017.11.024

14 **Artículo científico**. Inmaculada Vega; David Gallego; Pedro Ribera; Francisco de Paula Gomez; Ricardo Garcia-Herrera; Cristina Peña-Ortiz. 2018. Reconstructing the Western North Pacific Summer Monsoon since the late 19th century. Journal of Climate. 31, pp.355-368. https://doi.org/10.1175/JCLI-D-17-0336.1

15 **Artículo científico**. Ricardo García-Herrera; David Barriopedro; David Gallego; Javier Mellado; Dennis Wheeler; Clive Wilkinson. 2018. Understanding weather and climate of the last 300 years from ships logbooks. WIREs Climate Change. Wiley. 9. https://doi.org/10.1002/wcc.544

16 **Artículo científico**. David Gallego; Ricardo García-Herrera; Cristina Peña-Ortiz; Pedro Ribera. 2017. The steady enhancement of the Australian Summer Monsoon in the last 200 years. Scientific Reports. 7. https://doi.org/10.1038/s41598-017-16414-1

17 **Artículo científico**. Paulina Ordoñez; David Gallego; Pedro Ribera; Cristina Peña; Ricardo Garcia-Herrera. 2016. Tracking the Indian Summer Monsoon onset back to the pre-instrumental period. Journal of Climate. 29, pp.8115-8127. https://doi.org/10.1175/JCLI-D-15-0788.1

18 **Artículo científico**. David Gallego; Paulina Ordoñez; Pedro Ribera; Cristina Peña-Ortiz; Ricardo García-Herrera. 2015. An instrumental index of the West African Monsoon back to the nineteenth century. Quarterly Journal of the Royal Meteorological Society. 141, pp.3166-3176. https://doi.org/10.1002/qj.2601

19 **Artículo científico**. Severin Irl; David E.V. Harter; Manuel J. Steinbauer; David Gallego; Jose María Fernandez; Anke Jentsch; Carl Beierkuhnlein. 2015. Climate vs. topography – spatial patterns of plant species diversity and endemism on a high-elevation island. Journal of Ecology. 103, pp.1621-1633. https://doi.org/10.1111/1365-2745.12463

20 **Artículo científico**. David Barriopedro; David Gallego; María del Carmen Álvarez-Castro; Ricardo García-Herrera; Dennis Wheeler; Cristina Peña-Ortiz; Susana Barbosa. 2014. Witnessing North Atlantic westerlies variability from ships' logbooks (1685-2008). Climate Dynamics. 43, pp.939-955. https://doi.org/10.1007/s00382-013-1957-8

21 **Artículo científico**. Paulina Ordoñez; Pedro Ribera; David Gallego; Cristina Peña-Ortiz. 2013. Influence of Madden-Julian Oscillation on water budget transported by the Somali low-level jet and the associated Indian summer monsoon rainfall. Water Resources Research. 49, pp.6474-6485. https://doi.org/10.1002/wrcr.20515

22 **Artículo científico**. Cristina Peña-Ortiz; David Gallego; Pedro Ribera; Paulina Ordoñez; Maria del Carmen Álvarez-Castro. 2013. Observed trends in the global jet stream characteristics during the second half of the 20th century. Journal of Geophysical Research: Atmospheres. 118, pp.2702-2713. https://doi.org/10.1002/jgrd.50305

23 **Artículo científico**. Paulina Ordóñez; Pedro Ribera; David Gallego; Cristina Peña-Ortiz. 2012. Major moisture sources for Western and Southern India and their role on synoptic scale rainfall events. Hydrological Processes. 26, pp.3886-3895. https://doi.org/10.1002/hyp.8455

24 **Capítulo de libro**. Ricardo García-Herrera; David Gallego; David Barriopedro; Javier Mellado-Cano. 2018. Ship logbooks help to understand climate variability. Advances in Shipping Data Analysis and Modeling: Tracking and Mapping Maritime Flows in the Age of Big Data. Routledge. pp.37-51. ISBN 978-1-138-28093-9.

C.3. Proyectos o líneas de investigación

1 **Proyecto**. PID2023-150798NB-I00, El papel del vórtice polar en la predictibilidad de eventos extremos en el Hemisferio Norte (VORTEX). Proyectos de Generación del Conocimiento 2023. Mª del Carmen Álvarez Castro. (Universidad Pablo de Olavide). 01/09/2024-31/08/2027. 183.750 €. Miembro de equipo.

2 **Proyecto**. UPO-1266073, EFIMERA: Evaluación de Futuros Impactos de MEdicanes, Riesgos Asociados. Consejería de conocimiento, investigación y universidad. Maria del Carmen Alvarez Castro. (Universidad Pablo de Olavide). 01/02/2020-31/01/2022. 85.000 €. Miembro de equipo.

3 **Proyecto**. Predicción de Monzones Mediante Técnicas Soft Computing. Universidad Pablo de Olavide. David Gallego Puyol. (Universidad Pablo de Olavide). 12/12/2020-31/12/2021. 7.000 €. Investigador principal.

4 **Proyecto**. BITACOR, Reconstrucción del clima a partir de cuadernos de bitácora, BitacoR. Universidad Pablo de Olavide. David Gallego Puyol. (Universidad Pablo de Olavide). 01/11/2019-31/12/2021. 42.000 €. Investigador principal.

5 **Proyecto**. EQC2018-005303-P, Estación para aplicaciones dendrocronológicas en investigaciones medioambientales. Ministerio de Ciencia y Tecnología. Juan Carlos Linares Calderon. (Universidad Pablo de Olavide). 01/01/2018-31/03/2021. 393.577,97 €. Miembro de equipo.

6 **Proyecto**. CGL2015-72164-EXP, Determinación del upwelling costero en NW África a partir de diarios de navegación (1700-actualidad). Ministerio de Economia y Competitividad. Ricardo García Herrera. (Universidad Complutense de Madrid). 01/05/2017-31/12/2020. 50.000 €. Miembro de equipo.

7 **Proyecto**. CGL2016-78562-P, Variabilidad del vapor de agua en la baja estratosfera (VABES). Ministerio de economia y competitividad. Cristina Peña Ortiz. (Universidad Pablo de Olavide). 30/12/2016-29/12/2020. 136.730 €. Investigador principal.

8 **Proyecto**. UNPO15-CE-3208, Consolidación del centro de cálculo de la UPO mediante la ampliación y mejora del clúster de procesadores de alta capacidad para cálculo científico. Ministerio de Economía y Competitividad. Alejandro Cuetos Menéndez. (Universidad Pablo de Olavide). 01/01/2016-31/12/2018. 199.357 €. Miembro de equipo.

9 **Proyecto**. P12-TIC-1728, Técnicas Avanzadas para el Análisis de Datos Temporales: Aplicación a Terremotos y Contaminación Ambiental (MOTRIZ). (Antigua) Consejería de Economía, Innovación y Ciencia. Alicia Troncoso Lora. (Universidad Pablo de Olavide). 27/06/2014-26/06/2018. 35.850 €. Miembro de equipo.

10 **Proyecto**. CGL2013-44530-P, Nueva generación de índices climáticos instrumentales. Aplicación al estudio de la teleconexión monzón-Mediterráneo (INCITE). Ministerio de economia y competitividad. David Gallego Puyol. (Universidad Pablo de Olavide). 01/01/2014-31/12/2017. 103.100 €. Investigador principal.

11 **Proyecto**. P10-RNM-6547, Escenarios futuros de inundación costera en la Bahía de Cádiz: implicaciones en la gestión de la zona litoral. Junta de Andalucía. Javier Benavente. (Universidad de Cádiz). 26/03/2013-30/08/2016. 34.000 €. Miembro de equipo.

12 **Contrato**. Estudio sobre la probabilidad de impacto de un huracán a partir de registro histórico en zonas de interés de la Cuenca del Atlántico Norte Azora Inversiones. David Gallego Puyol. 10/04/2016-22/04/2016. 5.390,55 €.

Curriculum Vitae Abreviado

Fecha del CVA 20/11/2024

Parte A. DATOS PERSONALES

Nombre: Germán Alejandro
Apellidos: Rodríguez Rodríguez
Sexo: Hombre
Fecha de Nacimiento: 03/05/1963
DNI/NIE/Pasaporte:
Dirección Email:
Open Researcher and Contributor ID (ORCID): https://orcid.org/0000-0003-2929-5124

A.1. Situación profesional actual

Puesto: Catedrático de Universidad
Fecha inicio: 2003
Organismo / Institución: Universidad de Las Palmas de Gran Canaria (ULPGC)
Departamento / Centro: Física / Instituto Universitario de Estudios Ambientales y Recursos Naturales
País: España
Teléfono:
Palabras clave: Hidrodinámica Costera, Procesos Estocásticos, Ingeniería de Costas

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora - indicar meses totales, según texto convocatoria-)

Periodo Puesto / Institución / País:

- 1998 - 2003 Profesor Titular de Universidad (PTU) / ULPGC
- 1996 - 1998 Prof.Titular de Universidad Interino (PTUI) / ULPGC
- 1987 - 1996 Prof.Titular de Escuela Universitaria Interino (TEUI) /ULPGC

A.3. Formación académica

- Doctorado en Física. Universidad de las Palmas de Gran Canaria, 1995
- Licenciatura en Ciencias del Mar. Universidad de las Palmas de Gran Canaria, 1987

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con “peer review” y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones.

1 (Artículo científico). Di Paola, G., Rodríguez, G., & Rosskopf, C. M. 2023. Shoreline Dynamics and Beach Erosion. *Geosciences*, *13*(3), 74. https://doi.org/10.3390/ geosciences13030074
2 (Artículo científico). Rodriguez-Gonzalez, A, Fernandez-Turiel, J.L. Aulinas, M., Cabrera, M.C., Prieto-Torrell, C., Rodriguez, G., Guillou, H., Perez-Torrado, F.J.2022. Lava deltas, as a key landform in oceanic volcanic islands: El Hierro, Canary Islands. Geomorphology. Elsevier. 416, pp.1-22. https://doi.org/10.1016/j.geomorph.2022.108427

3 (Artículo científico). Gianluigi Di Paola, Antonio Minervino Amodio, Grazia Dilauro, Germán Rodríguez, Carmen M. Rosskopf 2022. Shoreline evolution and erosion vulnerability assessment along the Central Adriatic coast with the contribution of UAV beach monitoring Geosciences. MDPI. 12, pp.1-22. https://doi.org/10.3390/ geosciences12100353
4 (Artículo científico). Guerra-Medina, D., Rodríguez G, 2021. Spatiotemporal variability of extreme wave storms in a beach tourism destination area. Geosciences. MDPI. 11, pp.3-18. https://doi.org/10.3390/geosciences11060237
5 (Artículo científico). Di Paula, G, Rodríguez, G., Rosskopf, C., 2020. Short-to-mid-term shoreline changes along the southeastern coast of Gran Canaria (Spain) Rendiconti Lincei, Scienze Fisiche e Naturali. Springer. 31, pp.89-102. https://doi.org/10.1007/s12210-020-00872-3
6 (Artículo científico). Fernández Prieto, L; Rodríguez G.; Schallenberg, J. 2019. Wave energy to power a desalination plant in the north of Gran Canaria Island: Wave resource, socioeconomic and environmental assessment Journal of Environmental Management. Elsevier. 231, pp.546-551. https://doi.org/10.1016/j.jenvman.2018.10.071.
7 (Artículo científico). Santana J; Fortes J; Reis T; Rodríguez G. 2019. Wave overtopping and flood risk assessment in harbours: The Port of Las Nieves and its future expansión. Int. J. Environmental Impacts. WIT Press. ISSN 2398-2659. 10.2495/EI-V2-N1-59-71
8 (Artículo científico). Varela J.M..; Rodríguez G.; Guedes-Soares C.2018. Comparison study between the Fourier and the Hartley transforms for the real-time simulation of the sea surface elevation. Applied Ocean Research. Elsevier. 74, pp.227-236. ISSN 0141-1187. https://doi.org/doi.org/10.1016/j.apor.2018.03.002.
9 (Artículo científico). Rosskopf C.; Di Paula G.; Atkinson D.; Rodríguez G.; Walker I.J.2018. Recent shoreline evolution and beach erosion along the central Adriatic coast of Italy: The case of Molise región. Journal of Coastal Conservation. Springer. 22, pp.879-895. https://doi.org/10.1007/s11852-017-0550-4.
10 (Artículo científico). Clarindos G; Reis T; Fortes J; Rodríguez G.2018. Risk assessment of coastal flood in a site of special scientific interest. Journal of Coastal Conservation. Springer. 22, pp.1157-1166. ISSN 1400-0350. https://doi.org/doi.org/10.1007/s11852-018-0625-x.
11 (Artículo científico). Di Paula G.; Aucelli P.P.C.; Benassai G.; Iglesias J.; Rodríguez G.; Rosskopf C.2018. The assessment of the coastal vulnerability and exposure degree of Gran Canaria Island (Spain) with a focus on the coastal risk of Las Canteras Beach in Las Palmas de Gran Canaria. Journal of Coastal Conservation. Springer. 22, pp.1001-1015. https://doi.org/doi.org/10.1007/s11852-017 0574-9
12 (Artículo científico). Mcknight L.; Rodríguez G.2017. Distribution of marine debris stranded in a city beach - Las Canteras Beach case. WIT Transactions on the Built Environment. 170, pp.11-22. https://doi.org/10.2495/CC170021.
13 (Artículo científico). Cabrera L.; Rodríguez G.; García-Weil L.; Pacheco M.; Perez E.; Waniek, J.J.2017. Fractal analysis of Deep ocean current speed time series. Journal of Atmospheric and Oceanic Technology. American Meteorological Society. 34-4, pp.817-827. ISSN 0739-0572. https://doi.org/10.1175/JTECH-D-16-0098.1.
14 (Artículo científico). Santana J.; Fortes J.; Reis T.; Rodríguez G.2017. Wave overtopping and flood risk assessment in harbours: The Port of Las Nieves case WIT Transactions on The Built Environment. WIT Press. 170, pp.1-10. ISSN 1743-3509. https://doi.org/ 10.2495/CC170011.
15 (Artículo científico). Cuadra L.; Salcedo-Sanz S.; Nieto-Borge J. C.; Alexandre E.; Rodríguez G.2016. Computational intelligence in wave energy: Comprehensive review and case study.Renewable and Sustainable Energy Reviews. Elsevier. 58, pp.1223-1246. https://doi.org/dx.doi.org/10.1016/j.rser.2015.12.253.
16 (Artículo científico). Cornejo-Bueno L.; Nieto-Borge, J. C.; García-Díaz P.; Rodríguez G.; Salcedo-Sanz S.2016. Significant wave height and energy flux prediction for marine energy applications: A grouping genetic algorithm – Extreme Learning Machine approach Renewable Energy. Elsevier. 97, pp.380-389. ISSN 0960-1481. https://doi.org/dx.doi.org/ 10.1016/j.renene.2016.05.094.
17 (Artículo científico). Rodríguez G.; Clarindo G.; Guedes-Soares C.2016. Wave Energy assessment along the west coast of Fuerteventura Progress in Renewable Energies Offshore. Taylor & Francis Group. 1, pp.37-44. ISBN 978-1-138-62627-0.
18 (Artículo científico). Rodríguez G.; Cabrera L.; Pacheco M. 2015. Assessing and modeling annual patterns in wave energy resources off Canary Archipelago Renewable Energies Offshore. Taylor & Francis Group. pp.105-112. ISBN 978-1-138-02871-5.

19 (Artículo científico). Pérez N.; Rodríguez G.; Pacheco J.M.2014. Atmospheric recirculation on the east coast of Gran Canaria Island WIT Transactions on Ecology and the Environment. WIT Press. 138, pp.15-25. ISSN 1743-3541, ISBN 978-1-84564-782-7. https://doi.org/10.2495/AIR140021
20 (Artículo científico). Di Paula G.; Aucelli P.P.C.; Bennasai G.; German Rodriguez G.2014. Coastal vulnerability to wave storms of Sele littoral plain (southern Italy) Natural Hazards. Springer. 71-3, pp.1795-1819. https://doi.org/10.1007/s11069-013-0980-8.
21 (Artículo científico). Peñate I.; Martin-Gonzalez JM.; Rodriguez G.; Cianca A.2013. Scaling properties of rainfall and desert dust in the Canary Islands Nonlinear processes in Geophysics. Copernicus Publications. 20-6, pp.1079-1094. ISSN 1023-5809. https://doi.org/10.5194/npg-20-1079-2013.
22 (Artículo científico). Vega J.L.; González J.; Rodríguez G.2013. Statistical assessment of annual patterns in coastal extreme wave conditions WIT Transactions on Ecology and the Environment. WIT Press. 169, pp.39-49. https://doi.org/10.2495/CP130041.
23 (Artículo científico). Cabrera L.; Rodríguez G.2011. Detrended fluctuation analysis of significan wave height time series WIT Transactions on Ecology and the Environment. WIT Press. SI-61, pp.333-341. https://doi.org/10.2495/CP110281.
24 (Artículo científico). Di Paola G; Iglesias J; Rodríguez G; Benassai G; Aucelli P.; Papone G.2011. Estimating Coastal Vulnerability in a Meso-tidal beach by means of quantitative and semi-quantitative methodologies. Journal of Coastal Research. Coastal Education & Research Foundation. SI-61, pp.303-308. https://doi.org/10.2112/SI61-001.1.
25 (Artículo científico). Vega JL.; Rodríguez G.2009. Modelling mean wave direction distribution with the von Mises model WIT Transactions on Ecology and the Environment. WIT Press. 126, pp.3-14. https://doi.org/10.2495/CP090011.
26 (Artículo científico). Nieto J.C.; Rodríguez G.; Pacheco M.2006. Análisis bidimensional de grupos de oleaje a partir de imágenes SAR Revista de Teledetección. Asociación Española de Teledetección. 25, pp.45-49. ISSN 1133-0953.
27 (Artículo científico). Izquierdo P.; Nieto J.C.; Rodríguez G.2006. Análisis de oleaje y corrientes superficiales mediante radar de navegación en banda X Revista de Teledetección. Asociación Española de Teledetección. 25, pp.50-54. ISSN 1133-0953.
28 (Artículo científico). Izquierdo P.; Nieto J.C.; Guedes-Soares C.; Sanz R.; Rodríguez G.2005. Comparison of wave spectra from nautical radar images and scalar buoy data Journal of Waterway, Port, Coastal and Ocean Engineering. American Society of Civil Engineers. 131-3, pp.123-131. ISSN 0733-950X. https://doi.org/10.1061/(ASCE)0733-950X(2005)131:3(123).
29 (Artículo científico). Rodríguez G.; Pacheco M.; Guedes-Soares C.2005. Maximum Wave Height Distribution in a Sea State: Effects of Record Length and Spectral Peakedness Journal of Offshore Mechanics and Arctic Engineering. American Society of Mechanical Engineers. 127-4, pp.340-344. ISSN 0892-7219. https://doi.org/10.1115/1.2073113.
30 (Artículo científico). Izquierdo P.; Nieto J.C.; Guedes-Soares C; Rodríguez G.2004. A comparison of sea state parameters from nautical radar images and buoy data Ocean Engineering. 31-17–18, pp.2209-2225. ISSN 0029-8018. https://doi.org/doi.org/ 10.1016/j.oceaneng.2004.04.004
31 (Artículo científico). Nieto J.C.; Rodríguez G.; Hessner K.; Izquierdo P.2004. Inversion of nautical radar images for surface wave análisis. Journal of Atmospheric and Oceanic Technology. AMS. 21-8, pp.1291-1300. ISSN 0739-0572. https://doi.org/doi.org/ 10.1175/1520-0426(2004)021<1291:IOMRIF>2.0.CO;2
32 (Artículo científico). Rodríguez G.; Guedes-Soares G.; Pacheco M.2004. Wave period distribution in mixed sea states Journal of Offshore Mechanics and Arctic Engineering. ASME. 126, pp.105-112. ISSN 0892-7219. https://doi.org/10.1115/1.1643387.
33 (Artículo científico). Rodríguez G.2003. Analysis and simulation of wave records through Fast Hartley Transform Ocean Engineering. Elsevier. 30, pp.2255-2273. ISSN 0029-8018. https://doi.org/10.1016/S0029-8018(03)00077-5.
34 (Artículo científico). Rodríguez G.; Guedes-Soares C.; Pacheco M.; Pérez-Martell E.2002. Wave height distribution in mixed sea states Journal of Offshore Mechanics and Arctic Engineering. ASME. 124-1, pp.34-40. ISSN 0892-7219. https://doi.org/10.1115/1.1445794
35 (Artículo científico). Rodríguez G.; Guedes-Soares C.2001. Correlation between successive wave heights and periods in mixed sea states. Ocean Engineering. Elsevier. 28-8, pp.1009-1030. ISSN 0029-8018. https://doi.org/10.1016/S0029-8018(00)00038-X

36 (Artículo científico). Rodríguez G.; Pacheco M.; García-Weil L.; Tejera A.; Pérez-Martell E.; McClimans T.A.2001. Efectos orográficos sobre la circulación en la capa superficial del océano en el noroeste de África. Física de la Tierra. Ediciones Complutense. 13, pp.181-200. ISSN 0214-4557.
37 (Artículo científico). Rodríguez G.; Guedes-Soares C; Ferrer L.2000. Wave group statistics of numerically simulated mixed sea states. Journal of Offshore Mechanics and Arctic Engineering. ASME. 122-4, pp.282-288. ISSN 0892-7219. https://doi.org/ 10.1115/ 1.1313532. https://doi.org/10.1115/1.1313532
38 (Artículo científico). Rodríguez G.; Guedes-Soares C.1999. A criterion for the automatic identification of multimodal sea wave spectra. Applied Ocean Research. 21-6, pp.329-333. https://doi.org/10.1016/S0141-1187(99)00007-3
39 (Artículo científico). Rodríguez G.; Guedes-Soares C; Ocampo-Torres F.1999. Experimental evidence of the transition between power law models in the high frequency range of the gravity wave spectrum. Coastal Engineering. 38, pp.249-259. https://doi.org/10.1016/S0378-3839(99)00048-4
40 (Artículo científico). Rodríguez G.; Nistal A.; Pérez B.1999. Joint occurrence of high tide, surge and storm-waves on the northwest Spanish coast. Boletín del Instituto Español de Oceanografía. 15-(1-4), pp.21-29.
41 (Artículo científico). Rodríguez G.; Rubio-Royo F.; Pacheco M.; Martínez A.1999. On the joint distribution of wave heights and periods: The role of the spectral bandwidth. Journal of Offshore Mechanics and Arctic Engineering. ASME. 121-3, pp.187-193. https://doi.org/ 10.1115/1.2829564
42 (Artículo científico). Rodríguez G.; Guedes-Soares C.1999. The bivariate distribution of wave heights and periods in mixed sea states. Journal of Offshore Mechanics and Arctic Engineering. 121-1, pp.102-108. https://doi.org/10.1115/1.2830073
43 (Artículo científico). Rodríguez G.; Guedes-Soares C.1999. Uncertainty in the estimation of the slope of the high frequency tail of wave spectra. Applied Ocean Research. Elsevier. 21-4, pp.207-213. ISSN 0141-1187. https://doi.org/10.1016/S0141-1187(99)00014-0
44 (Artículo científico). Rodríguez G.; Guedes-Soares C.; Machado U.1999. Uncertainty of the sea state parameters resulting from the methods of spectral estimation. Ocean Engineering. 26-10, pp.991-1002. https://doi.org/10.1016/S0029-8018(98)00027-4
45 (Artículo científico). Jiménez J.A.; Guillén J.; Gracia V.; et al; Rodríguez, G.1999. Water and sediment fluxes on the Ebro delta shoreface: On the role of low frequency currents. Marine Geology. 157, pp.219-239. ISSN 0025-3227. https://doi.org/10.1016/S0025-3227(98)00153-4.
46 (Artículo científico). Rodríguez G.; Rubio-Royo F.1998. Unification of fourth inverse power law models for the wave spectrum high frequency range. Anales de Física. Real Sociedad Española de Física. 94-1, pp.41-45. ISSN 1133-0376.
47 (Artículo científico). Martínez, A.; Pérez E.; Bruno M.; Rodríguez G.1997. Análisis de los niveles del mar y de las corrientes de marea alrededor de la isla de Gran Canaria. Boletín del Instituto Español de Oceanografía. 13-(1-2), pp.3-12. ISSN 1135-8483.
48 (Capítulo de libro). Rodríguez G.; Petrova P. G.; Guedes-Soares C.2011. Short-term wave statistics in sea states with two-peaked spectrum. Marine Technology and Engineering. CRC Press. 1, pp.147-163. ISBN 978-0415698085.
49 (Capítulo de libro). Nieto-Borge J.C..; Rodríguez G.; Gómez J.; Álvarez J.L.; Catalán M.2009. Radar de apertura sintética (SAR): Campos de olas, viento y ondas internas. Oceanografía y Satélites. Tebar. pp.229-255. ISBN 978-84-7360-268-6.
50 (Edición científica). Rodríguez G.; Brebbia C.A.2013. Coastal Processes III. WIT Press. pp.1-272. ISBN 978-1-84564-698-1.
51 (Edición científica). Brebbia C.A.; Rodríguez G.2013 Fluid Structure Interaction VII. WIT Press. pp.1-292. ISBN 978-1-84564-700-1.
52 (Edición científica). Benassai G.; Brebbia C.A.; Rodríguez G.2011. Coastal Processes II. WIT Press. pp.1-368. ISBN 978-1-84564-534-2.
53 (Edición científica). Brebbia C.A; Benassai G.; Rodríguez G.2009. Coastal Processes. WIT Press. pp.1-320. ISBN 978-1-84564-200-6.
54 (Edición científica). Rodríguez G.; Brebbia C.A.; Pérez-Martell E.2000. Environmental Coastal Regions III. WIT Press. pp.1-456. ISBN 978-1-85312-827-1.
55 (Edición científica). Rodríguez G.; Brebbia C.A.2000. Oil & Hydrocarbon Spills II. WIT Press. ISBN 978-1-85312-828-8.

CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

First name	Irene		
Family name	Sendiña Nadal		
Gender (*)	Female	Birth date	23/01/1973
e-mail			
Open Researcher and Contributor ID (ORCID) (*)		0000-0003-0432-235X	

(*) Mandatory

A.1. Current position

Position	Full professor (with 4 six-year terms, last one granted on 2021)		
Initial date	03/01/2022		
Institution	Universidad Rey Juan Carlos		
Department/Center	Matemática Aplicada, Ciencia e Ingeniería de los Materiales y Tecnología Electrónica	Escuela Superior de Ciencias Experimentales y Tecnología	
Country	Spain	Teleph. number	+34 914 88 75 22
Key words	Complex systems, synchronization, biological networks		

A.2. Previous positions (research activity interuptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
2001-2005	Assistant Professor/ URJC / Spain
2005-2009	Profesor Contratado Doctor / URJC / Spain
2009-2022	Associate Professor / URJC / Spain
2022-	Full Professor / URJC / Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Graduate in Physical Sciences	Universidad de Santiago de Compostela / Spain	1996
PhD in Physics	Universidade de Santiago de Compostela / Spain	**2001**

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

I graduated in Physics in 1996, and I got my PhD in Physics at the Universidad de Santiago de Compostela in 2001, joining the Universidad Rey Juan Carlos as an Assistant Professor the same year, where I have been a Full Professor since 2022. In 2009, I also became a research member of the Biomedical Technology Center (UPM), where I lead the lab of in vitro cultured neuronal networks.

My research started in the field of pattern formation in reaction-diffusion systems and stochastic processes, making important experimental and theoretical contributions to the study of propagation and emergence of spatiotemporal waves driven by noise. These contributions were published in four PRLs and had a significant impact on the community. During that period, I was funded with an FPI fellowship and by the Xunta de Galicia, and I visited several research centers like the Max Planck in Dortmund, the Barcelona University, the WVU in the USA, and the TUB in Berlin.

After my doctoral period, my research has been mostly devoted to the study of Complex Systems in biology and sociology, describing their behavior using Statistical Physics, Network Science, and Dynamical Systems Theory, focusing on understanding the relationship between the structure of interactions among nonlinear dynamical systems and their performance. Our

group significantly contributed to the understanding of the mechanisms underlying explosive synchronization, a phenomenon that may explain epileptic seizures and be crucial in the management of electric power networks. As a result, four PRLs and two highly cited revision works in the field were published in Phys Rep in 2014 and 2016. During the last years, and after several visits to Tel Aviv University, my work has turned into the field of neuroscience, making in vitro neuronal cultures with one of the unique setups allowing us to closely inspect simultaneously the spatial and functional organization of living neurons aiming at unveiling the mechanisms involved in neuronal activity integration and segregation, to test new methods for the reconstruction of brain functional networks and new markers in the early diagnosis of neurodegenerative diseases.

I have published more than 70 articles in JCR journals, with 85% in the first quartile and with more than 4000 citations according to the Web of Science and an h-index of 25 (over 6000 citations and an h-index of 28 in Google Scholar). I participated in 18 research projects, and since 2009, I acted as PI in 5 competitive research projects, 3 of them from the national plan, and granted a US-ONRG project to partially fund the 15th Experimental Chaos and Complexity Conference, where I acted as General Chair in 2018. I presented my work 74 times, including 15 invited talks. I supervised 3 PhD students, funded by the regional administration and the university research program, and whose professional careers are in academia as a postdoctoral fellow at the Ernst Strüngmann Institute for Neuroscience (A. Tlaie) and in the private sector as a Data Scientist Team Leader (D. de Santos-Sierra). I have been acting as Academic Editor of PLOS ONE since 2015, Associate Editor of Frontiers in Network Physiology since 2022, member of the Chaos Advisory Board since 2020, and I joined the FISES and GEFENOL scientific committees in 2023, the most important Statistical Physics and Complex Systems forums in Spain. I also participated in the scientific-technical committees to evaluate the proposals for the national research call (RTI, PGC, and RyC) in 2018, 2021, and 2023.

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

L.M. Ballesteros-Esteban*, I. Leyva, J.A. Almendral, I. Sendiña-Nadal (2023). Self-organization and evolution of structure and function in cultured neuronal networks, Chaos Solitons and Fractals 173:113764. (4/4) DOI: 10.1016/j.chaos.2023.113764

K. Kovalenko, I. Sendiña-Nadal*, N. Khalil, A. Dainiak, D. Musatov, A.M. Raigorodskii, K. Alfaro-Bittner, B. Barzel, and S. Boccaletti (2021), Growing scale-free simplices, Communication Phys. 4:43. (2/9) DOI: 10.1038/s42005-021-00538-y

S. Boccaletti*, G. Bianconi, R. Criado, C.I. del Genio, J. Gómez-Gardeñes, M. Romance, I. Sendiña-Nadal, and Z. Wang (2014), The structure and dynamics of multilayer networks, Phys. Rep. 544: 1-122. (7/8) DOI**:** 10.1016/j.physrep.2014.07.001

A. Adjari Rad, I. Sendiña-Nadal*, D. Papo, M. Zanin, J.M. Buldú, F. del Pozo, and S. Boccaletti (2012), Topological Measure Locating the Effective Crossover between Segregation and Integration in a Modular Network, Phys. Rev. Lett. 108: 228701. (2/7) DOI: 10.1103/PhysRevLett.108.228701

I. Leyva, R. Sevilla-Escoboza, J.M. Buldú, I. Sendiña-Nadal, J. Gómez-Gardeñes, A. Arenas, Y. Moreno, S. Gómez, R. Jaimes-Reátegui, and S. Boccaletti (2012), Explosive First-Order Transition to Synchrony in Networked Chaotic Oscillators, Phys. Rev. Lett. 108: 168702. (4/10) DOI: 10.1103/PhysRevLett.108.168702

D. Li, I. Leyva, J.A. Almendral, I. Sendiña-Nadal, J.M. Buldú, S. Havlin, and S. Boccaletti (2008), Synchronization Interfaces and Overlapping Communities in Complex Networks, Phys. Rev. Lett. 101: 168701. (4/7) DOI: 10.1103/PhysRevLett.101.168701

O.-U. Kheowan, E. Mihaliuk, B. Blasius, I. Sendiña-Nadal, and K. Showalter (2007), Wave Mediated Synchronization of Nonuniform Oscillatory Media, Phys. Rev. Lett. 98: 074101. (4/5) DOI: 10.1103/PhysRevLett.98.074101

I. Sendiña-Nadal, E. Mihaliuk, J. Wang, V. Pérez-Muñuzuri, and K. Showalter* (2001), Wave Propagation in Subexcitable Media with Periodically Modulated Excitability, Phys. Rev. Lett. 86: 1646-1649. (1/5) DOI: 10.1103/PhysRevLett.86.1646

I. Sendiña-Nadal*, S. Alonso, V. Pérez-Muñuzuri, M. Gómez-Gesteira, V. Pérez-Villar, L. Ramírez-Piscina J. Casademunt, J. M. Sancho, and F. Sagués (1998), Brownian Motion of Spiral Waves Driven by Spatiotemporal Structured Noise, Phys. Rev. Lett. 84: 2734-2737. (1/9) DOI: 10.1103/PhysRevLett.84.2734

I. Sendiña-Nadal*, A. P. Muñuzuri, D. Vives, V. Pérez-Muñuzuri, J. Casademunt, L. Ramírez-Piscina, J. M. Sancho, and F. Sagués (1997), Wave Propagation in a Medium with Disordered Excitability, Phys. Rev. Lett. 80: 5437-5440. (1/8) DOI: 10.1103/PhysRevLett.80.5437

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

(Invited Conference) I. Sendiña-Nadal, Dynamical Methods in Data-based Exploration of Complex Systems, Max-Planck-Institut für Physik komplexer Systeme, Dresden, Alemania, 07-11/10/2019

(Invited Conference) I. Sendiña-Nadal, New Trends on Complex Systems and Networks, Northwestern Polytechnical University, Xi'an, China, 24-25/10/2019

(Invited Conference) I. Sendiña-Nadal, XXII Congreso de Física Estadística, Madrid, 18-20/10/2018

(Invited Conference) I. Sendiña-Nadal, Réunion GT SYNC et Observation at Journées Automatique du GDR MACS, Quartz Labo- ratory EA 7393, Lille, Francia, 15-16/11/2016

(Invited Conference) I. Sendiña-Nadal, 2nd BCAM Workshop on Nonlinear Dynamics in Biological Systems, Basque Center for Applied Mathematics, Bilbao, 01-02/09/2016

(Invited Conference) I. Sendiña-Nadal, 4th International Conference on Complex Dynamical Systems & Applications, Indian Statis- tical Institute, Durgapur, India, 15-17/02/2016

(Invited Conference) I. Sendiña-Nadal, Dynamics Days Europe, University of Exeter, Exeter, Reino Unido, 6-10/9/2015

(Invited Conference) I. Sendiña-Nadal, Satellite workshop "Dynamics of complex living systems" en el 4th International Conference on Complex Systems and Applications, Normandie University, Le Havre, Francia, 23-26/06/2014

(Invited Conference) I. Sendiña-Nadal, 3rd International Symposium on Complex Dynamical Systems and Applications, Indian Sta- tistical Institute, Kolkata, India, 10-12/03/2014

(Invited Conference) I. Sendiña-Nadal, School on "Biological Complex Networks: From the Cell to the Brain and beyond", Universi- dade Federal do Rio Grande do Norte, Natal, Brasil, 08-19/07/2013

(Invited Conference) I. Sendiña-Nadal, International Workshop Complex Networks: Theory and Applications in Neuroscience, Sa- ratov State Technical University, Saratov, Rusia, 09-11/09/2013

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

PID2020-113737GB-I00, Mas allá de las interacciones entre pares de nodos en las redes complejas: Teoría, Experimentos y Aplicaciones (BEPAINT), Ministerio de Ciencia e Innovación 2020, I. Sendiña Nadal, J. M. Buldú (URJC) 01/09/2021-31/08/2024, 169.400€, participation as coPI.

FIS2017-84151-P, Interacción entre estructura y función en redes complejas: Teoría, Experimentos y Aplicaciones, Ministerio de Ciencia, Innovación y Universidades 2017, I. Sendiña Nadal, J. M. Buldú (URJC) 01/01/2018-31/12/2020, 84.700€, participation as coPI.

PEJD-2017-PRE/BIO-4615, Estudio de la relación entre la estructura y función de una red neuronal *in vitro* a lo largo de su desarrollo mediante el registro de potenciales extracelulares e imágenes de microscopio, Comunidad de Madrid, Ayudas para la contratación de investigadores predoctorales de la CAM, 2017, I. Sendiña Nadal (URJC), 01/03/2018-29/02/2020, 51.250 €, participation as PI.

FIS2013-41057-P, Análisis multi-escala de redes complejas: teoría, experimentos y aplicaciones, MINISTERIO DE ECONOMIA Y COMPETITIVIDAD, PLAN NACIONAL DE INVESTIGACIÓN NO ORIENTADA 2013, I. Sendiña Nadal, J.M. Buldú (URJC) 01/01/2014-31/12/2017, 89.540€, participation as coPI.

FIS2009-07072, Dinámica de redes complejas: teoría, aplicaciones y experimentación, MINISTERIO DE EDUCACION, CULTURA Y DEPORTE, MINISTERIO DE ECONOMIA Y COMPETITIVIDAD, PLAN NACIONAL DE INVESTIGACIÓN NO ORIENTADA 2009, I. Leyva, (URJC) 01/01/2010-31/12/2013, 76.230,01€, participation as a research member.

URC-CM-2008-CET-3575, Redes complejas in silico e in vitro, Ayudas para la realización de Proyectos de Investigación del Programa de Creación y Consolidación de Grupos de Investigación (BOCM 20 de mayo de 2008), I. Sendiña Nadal, 01/01/2009-31/12/2009, 30.000€, participation as PI.

CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

CV date	08/11/2024

Part A. PERSONAL INFORMATION

First name	Xesús		
Family name	Nogueira Garea		
Gender (*)	Male	Birth date (dd/mm/yyyy)	31/12/1976
Social Security, Passport, ID number			
e-mail			
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-6500-2109		

(*) Mandatory

A.1. Current position

Position	Professor/Catedrático			
Initial date	05/10/2022			
Institution	Universidade da Coruña			
Department/Center	Mathematics	E.T.S. Ingeniería de Caminos, Canales y Puertos		
Country	Spain		Teleph. number	
Key words	Numerical Methods, Turbomachinery, Computational Fluid Dynamics			

A.2. Previous positions (research activity interuptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
2011-2022	Profesor Titular de Universidade/ Universidade da Coruña/Spain
2011-2012	Visiting Professor/ Arts et Métiers ParisTech/France
2010-2011	Profesor Contratado Doctor/Universidade da Coruña/Spain
2006-2010	Researcher/Universidade da Coruña/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD	Universidade da Coruña	2009
Master de Recherche Sciences et Technologies	Ecole Nationale Supérieure d'Arts et Métiers	2005
Industrial Engineering	Universidade da Coruña	2001

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

Since October 2022, I am Professor at the Universidade da Coruña. I have also been a visiting professor at the *Laboratoire DynFluid* of *Arts et Métiers ParisTech*. My main research interest lays in the field of Computational Fluid Dynamics (CFD), in particular, the development of high-order methods for the simulation of compressible turbulent flows in complex geometries. From the industrial point of view,

my research is particularly applied to the numerical simulation of turbomachines. As a result of my research I have published 45 articles in international journals indexed in the JCR. I have also presented more than 80 oral presentations in international congresses. I have 3 periods of 6 years (2006-2011, 2012-2017 and 2018-2023) on research work (*sexenios*) recognized by the Spanish government. I usually collaborate with several international researchers, in particular:

1) Dr. Sofiane Khelladi (Arts et Métiers ParisTech in Paris): Development and application of numerical methods of great precision and optimization techniques to the calculation and design of turbomachinery Collaborations with companies such as Arianespace, SAFRAN group, PSA Peugeot-Citroen group, Renault or Valeo, among others. From this collaboration we have published 14 JCR articles.
2) Dr. Stéphane Clain (Universidade do Minho): Development of high-accuracy meshless methods for compressible flows. This collaboration started in the previous projects, and since then we have published 2 JCR papers.
3) Dr. Raphaël Loubère (Université de Bordeaux): Development of high-accuracy meshless methods for compressible flows. From this collaboration we have published 1 JCR article. Moreover, together with Professor Stéphane Clain, we organize the International Workshop "Sharing Higher-order Advanced Research Know-how on Finite Volume (SHARK-FV)", that takes place annually in Póvoa de Varzim (Portugal).
4) Dr. Panagiotis Tsoutsanis *(Cranfield University):* Member of the team for the Development of the open source UCNS3D code (https://ucns3d.com/). As a result of this collaboration, up to now, we have published 3 articles in JCR journals.

I have been Principal Investigator of 2 National projects, funded by the Spanish National R & D plan. The first one was funded by the *Ministerio de Economía y de Competitividad* (DPI2015-68431-R) funded with 112409 € and the second one was funded by the *Ministerio de Ciencia, Innovación y Universidades* (RTI2018-093366-B-I00) funded with 163350 €. According to the Web of Science, I have an h-index of 15, and I have been cited 546 times excluding self-citations. The relevance of my research is also evidenced by the fact that companies such as Valeo, Safran Aircraft Engines (Safran Group), have collaborated in my research. I have also been the IP of a research contract with INNOMERICS SL (funded with 20862 €). Currently I'm the PI of 2 National projects which will finish on 2024, with a total amount of funding of 302102€.

I have directed 3 doctoral Theses that reached the maximum qualification. One of my former PhD students (Luis Ramírez) is Contratado Doctor at the UDC and has obtained the ANECA accreditation for "*Profesor Titular de Universidad"*. Other student (Javier-Fernández Fidalgo), is "*Ayudante doctor"* at *the Universidad Politécnica de Madrid*, and the third one is also "*Ayudante doctor"* at the University of Vigo. I am editor of the *Computational Physics* area of the JCR Journal Open Physics (de Gruyter) and member of the scientific committee of several international congresses. I also act as a project evaluator for the ANEP (Spain), Czech Science Foundation and the *Agencia Nacional de Promoción Científica y Técnica* of the Argentine Republic. From June 2011 to February 2016, I was a member of the specific Commission of Engineering and Architecture of the Agency for the Quality of the University System of Catalonia (AQU). During the 2013-2017 period I held the position of Academic Secretary of the Department of Mathematical and Representation Methods of the UDC.

I have completed several research stays in the *Laboratoire DynFluid* of *Arts et Métiers ParisTech (*funded by Arts et Métiers*)* and at the Massachusetts Institute of Technology (MIT) in Cambridge (Boston, USA), funded by the *Fundación Caixa Galicia* and MIT. My Doctoral Thesis obtained the Prize of the Spanish Society of Numerical Methods in Engineering for the best doctoral thesis in numerical methods of the year 2009. In 2016, I received the Juan Carlos Simó Award from the Spanish Society of Numerical Methods in Engineering for the best young researcher.

Since May 2024, I am member of the executive committee of the Research Laboratory in Advanced Computational Methods for fluid mechanics and energy, which is an partnership between *Arts et Métiers ParisTech* and the University of A Coruña.

Part C. RELEVANT MERITS *(sorted by typology)*
C.1. Selected Publications

1. Xesús Nogueira, Javier Fernández-Fidalgo, Lucía Ramos, Iván Couceiro, Luis Ramírez, "Machine Learning-based WENO5 scheme", Computer and Mathematics with Applications, 168,84-99, 2024.
2. Javier Fernández-Fidalgo, Luis Cueto-Felgueroso, Luis Ramírez, Abel Martínez, Xesús Nogueira, "Pore-scale simulation of multiphase flows using equations of state that preserve the correct surface tension", Computer Methods in Applied Mechanics and Engineering, 428, 117072, 2024.
3. A. Eirís, L. Ramírez, I. Couceiro, J. Fernández-Fidalgo, J. París, X. Nogueira, "MLS-SPHALE: A review of Meshless-FV methods and a unifying formulation for particle discretizations", Archives of Computational Methods in Engineering, 30, 4959-4981, 2023.
4. Luis Ramírez, Laura Edreira, Iván Couceiro, Pablo Ouro, Xesús Nogueira, Ignasi Colominas, "A new Mean Preserving Moving Least Squares method for Arbitrary Order Finite Volume schemes", Applied Mathematics and Computation, 443, 127768, 2023.
5. P. Tsoutsanis, X. Nogueira, L. Fu "A short note on a 3D spectral analysis for turbulent flows on unstructured meshes", Journal of Computational Physics, 111804, 2022.
6. Javier Fernández-Fidalgo, Luis Ramíez, Panagiotis Tsoutsanis, Ignasi Colominas, Xesús Nogueira, "*A reduced-dissipation WENO scheme with automatic dissipation adjustment*", Journal of Computational Physics, 425,109749, (2021)
7. Charles Foulquié, Sofiane Khelladi, Michael Deligant, Luis Ramírez, Xesús Nogueira, Jacky Mardjono, "*Numerical Assessment of Fan Blades' Screen Effect on Fan/OGV Interaction Tonal Noise*", Journal of Sound and Vibration, 481,115428, (2020)
8. Pericles S. Farmakis, Panagiotis Tsoutsanis, Xesús Nogueira, "*WENO schemes on unstructured meshes using a relaxed a posteriori MOOD limiting approach*", Computer Methods in Applied Mechanics and Engineering, 363,112921, (2020)
9. X. Nogueira, L. Ramírez, J. Fernández-Fidalgo, M. Deligant, S. Khelladi, J.-C. Chassaing, F. Navarrina, "*An a posteriori-implicit turbulent model with automatic dissipation adjustment for Large Eddy Simulations of compressible flows*", Computers and Fluids, 197, 104371, (2020)
10. Luis Ramírez, Xesús Nogueira, Sofiane Khelladi, Abdelkader Krimi, Ignasi Colominas, "*A very accurate Arbitrary Lagrangian-Eulerian meshless method for Computational Aeroacoustics*", Computer Methods in Applied Mechanics and Engineering, 342, 116-141, (2018)
11. Luis Ramírez, Xesús Nogueira, Pablo Ouro, Fermín Navarrina, Sofiane Khelladi, Ignasi Colominas, "*A high-order Chimera method for finite volume schemes*", Archives of Computational Methods in Engineering, 25(3), 691-706, (2018)
12. Javier Fernández-Fidalgo, Xesús Nogueira, Luis Ramírez, Ignasi Colominas, "*An a posteriori, efficient, high-spectral resolution hybrid finite-difference method for compressible flows*", Computer Methods in Applied Mechanics and Engineering, 335: 91-127, (2018)

C.2. Congress (selected presentations)

1. **Xesús Nogueira,** Luis Ramírez, Javier Fernández-Fidalgo, Panagiotis Tsoutsanis, Fermín Navarrina, (ORAL PRESENTATION), Machine learning approaches to improve WENO schemes, ALGORITMY 2024 Central-European Conference on Scientific Computing, High Tatra Mountains, Slovakia, March 15-20, 2024
2. **Xesús Nogueira,** Luis Ramírez, Javier Fernández-Fidalgo, Panagiotis Tsoutsanis, Fermín Navarrina, (KEYNOTE LECTURE) Adaptive dissipation methods for the computation of turbulent flow, Mathematical methods for geoenergy applications MATHGEO 2, Nottingham, UK, March 23-24, 2023.
3. Abel Martinez, Luis Ramirez, Sofiane Khelladi, Fermín Navarrina, **Xesús Nogueira**, (KEYNOTE LECTURE) A high-order numerical method and improved isotherm reconstructions for the computation of multiphase flows using a phase-field approach, The 42nd Ibero-Latin-American Congress on Computational Methods in Engineering (XLII CILAMCE)

and the 3rd Pan American Congress on Computational Mechanics (III PANACM), Online, November 9-12, 2021.

4. **Xesús Nogueira**, Javier Fernández-Fidalgo, Luis Ramírez, Michael Deligant, Sofiane Khelladi, Jean-Camille Chassaing, Fermín Navarrina, (INVITED LECTURE) *A posteriori* methods with automatic dissipation adjustment for the simulation of compressible flows, 13th International Conference on Advances in Fluid Mechanics, Online, September 1-3, 2020.
5. **Xesús Nogueira**, Luis Ramírez, (KEYNOTE LECTURE) High-accurate meshless formulations for non-smooth compressible flows, 3rd International Conference on Fluid Dynamics and Aerodynamics, Berlin, Germany, October 25-26, 2018.
6. **Xesús Nogueira**, Luis Ramírez, Fermín Navarrina, (KEYNOTE LECTURE) A high-order finite volume scheme with adaptive numerical dissipation of the Riemann solver for the computation of compressible turbulent flows", The 1st International Symposium on Mechanics, Aberdeen, UK, July 9-12, 2018.
7. **Xesús Nogueira**, Luis Ramírez, "(INVITED TALK) High-accurate meshless formulations for non-smooth compressible flows", 2nd International Conference on Fluid Dynamics and Aerodynamics, Roma, Italy, October 19-20, 2017.

C.3. Research projects

1. **NEw methods for the oPtimal design of marine current TUrbiNEs (NEPTUNE) (TED2021-129805B-I00)**, **Financing entity:** Ministerio de Ciencia e Innovación, **Amount:**157895€, **Period:** 2022-2023, **Principal Researchers:** Xesús Nogueira Garea, Luis Ramírez Palacios
2. **High-Accurate numerical models for THE Development of a NEw generation of Off-shore renewable Energy farms (ATHENEA), (PID2021-125447OB-I00), Financing entity:** Ministerio de Ciencia e Innovación, **Amount:**164802€, **Period:** 2022-2024, **Principal Researchers:** Luis Ramírez Palacios, Xesús Nogueira Garea

3. **New Meshless methods for the numerical simulation of turbulent flows and multiphySIcS problems. Application to the development of renewable energy generation systems (RTI2018-093366-B-I00). Financing entity:** Ministerio de Ciencia, Innovación y Universidades. **Amount:**163.350€, **Period:** 2019-2021**. Principal Researchers:** Xesús Nogueira Garea and Luis Ramírez

4. **Optimal design of installations and off-shore energy systems using high precision computational mechanics techniques. (DPI2015-68431-R).** Financing entity: Ministerio de Economía y de Competitividad. Amount:112.409€, Period: 2016-2018. **Principal Researchers**: Fermín Navarrina Martínez and Xesús Nogueira Garea.

As a researcher:

5. **VirionBreak: Cálculo dinámico de la cápside del SARS-CoV-2 para su destrucción por resonancia (COV20/01275). Financing entity:** Instituto de Salud Carlos III, Ministerio de Ciencia e Innovación, **Period:** 2020-2021. **Amount:** 59.250€. **Principal Researcher:** Fermín Navarrina Martínez.

C.4. Contracts, technological or transfer merits

1. *Realization of a mathematical-numerical model of optimization of the design of support structures for electrical lines and their implementation in a computer-aided design system*. ***Financing company***: ENMACOSA S.A. ***Period:*** March 2013-June 2014. ***Amount:*** 108900.00 Euros. ***Principal researcher***: Ignasi Colominas Ezponda. **(Researcher).**
2. *Specification of simulations using computational fluid mechanics (CFD) for the design of a component capable of mitigating acoustic resonances in relief and safety valves*. ***Financing company***: INNOMERICS, S.L. ***Period***: From 09/01/2014 to 02/28/2015. ***Amount***: 20862.07 Euros. ***Principal researcher***: Xesús Nogueira Garea.

Parte A. DATOS PERSONALES		**Fecha del CVA**	18/11/2024
Nombre y apellidos	Inés Pérez Mariño		
DNI/NIE/pasaporte		Edad	53
Núm. identificación del investigador	Researcher ID	L-2318-2017	
	Código Orcid	0000-0003-0152-0174	

A.1. Situación profesional actual

Organismo	Universidad Rey Juan Carlos		
Dpto./Centro	Bio. y Geo., Fís. y Qui. Ino./ E.S. CC. Experimentales y Tecnología		
Dirección	c/Tulipán s/n		
Teléfono		correo electrónico	
Categoría profesional	Catedrática de Universidad	Fecha inicio	1712/2021
Espec. cód. UNESCO	22 (Dinámica no lineal y caos)		
Palabras clave	Estimación de parámetros, sincronización, control, dinámica no lineal, estimación Bayesiana		

A.2. Formación académica *(título, institución, fecha)*

Licenciatura/Grado/Doctorado	Universidad	Año
Doctora en Ciencias Físicas	Facultad de Física. Universidad de Santiago	1999
Licenciada en Ciencias Físicas	Facultad de Física. Universidad de Santiago de Compostela	1994

A.3. Indicadores generales de calidad de la producción científica *(véanse instrucciones)*
Número de sexenios de investigación: 4
Fecha del último sexenio concedido: 2018
Citas totales: 959
Promedio de citas/año durante los últimos 5 años (sin incluir el año actual): 62,4
Publicaciones en JCR: 44
Publicaciones totales en Q1 en JCR: 31
Índice h: 20

Parte B. RESUMEN LIBRE DEL CURRÍCULUM *(máximo 3500 caracteres, incluyendo espacios en blanco)*

Inés Pérez Mariño se doctoró en Física en 1999 por la Universidad de Santiago de Compostela. Se incorporó a la Universidad Rey Juan Carlos en 2000 y es Catedrática en Física Aplicada en el Departamento de Biología y Geología, Física y Química Inorgánica de esta universidad en el área de Física Aplicada desde 2021 y coordinadora del Grado de Ciencias Experimentales. Anteriormente ocupó diversos puestos en esta universidad (Profesora Titular, Profesora Contratada Doctora, Profesora Asociada) y antes de su incorporación a la URJC había desarrollado su labor investigadora y docente en la Universidad de Santiago de Compostela, en la Universidad de Navarra y en la Universidad Politécnica de Cartagena.

La actividad investigadora de IPM desde 1994 se enmarca en el campo de la Física No Lineal, con especial atención al estudio de fenómenos de sincronización, control y estimación de parámetros en sistemas dinámicos, con aplicaciones al campo de la física, la biología y la medicina. Durante los últimos años también se ha centrado en la estimación Bayesiana en redes genéticas y en modelos para la detección precoz del cáncer de ovario, así como en métodos computacionales y aprendizaje automático aplicados a la biomedicina y la neurociencia.

El resultado de la actividad investigadora llevada a cabo durante estos años son 44

publicaciones en 22 revistas internacionales indexadas en el JCR con más de 30 publicaciones en el primer cuartil del JCR, 2 capítulos de libros en World Scientific y más de 50 participaciones en congresos y conferencias. IPM ha sido investigadora principal de 3 proyectos de investigación, participando en un total en más de 25, financiados éstos por distintas administraciones públicas. Esto incluye proyectos del "Plan Nacional I+D", acciones europeas COST, proyectos internacionales, acciones integradas con diversos grupos europeos y proyectos financiados por comunidades autónomas españolas y extranjeras.

IPM ha realizado diversas estancias en centros de investigación extranjeros, entre las que destacan: 6 meses (1998) en el grupo de caos del profesor Celso Grebogi en la Universidad de Maryland en College Park (Estados Unidos), 5 meses (en el período 2001-2003) en el grupo de investigación del profesor Tito Arecchi y Riccardo Meucci del Instituto de Óptica Aplicada de Florencia (Italia), y 20 meses (en el período 2013-2016) en el grupo del profesor Alexey Zaikin en University College London (Reino Unido). En los últimos años IPM fue nombrada "Honorary Senior Research Associate" en el "Institute for Women's Health" (2016-2021) de dicha universidad y "Honorary Associate Professor" (2022-2024) en el "Department of Women's Cancer" de UCL.

IPM es editora académica de la revista "PloS One" desde el año 2018 y de la revista "Complexity" desde el año 2021, incluidas ambas en el segundo cuartil de la categoría "Multidisciplinary Sciences" y "Mathematics, Interdisciplinary applications", respectivamente, del JCR.

Parte C. MÉRITOS MÁS RELEVANTES *(ordenados por tipología)*

C.1. Publicaciones

1. Artículo: J. Míguez; H Molina-Bulla; I.P. Mariño; 2024, Master-slave coupling scheme for synchronization and parameter estimation in the generalized Kuramoto-Sivashinsky equation, Phys. Rev. E Cancer Medicine 110 (5), 054206.

2. Artículo: L. Abrego; A. Zakin; I.P. Mariño; M.I. Krivonosov; I. Jacobs; U. Menon; A. Gentry-Maharaj; O. Blyuss, 2024, Bayesian and deep-learning models applied to the early detection of ovarian cancer using multiple longitudinal biomarkers, Cancer Medicine 2024; 13:e7163.

3. Artículo: M.A. Vázquez; A. Maghsoudi; I.P. Mariño, 2021, An Interpretable Machine Learning Method for the Detection of Schizophrenia Using EEG Signals. Front Syst Neurosci. 15: 652662.

4. Artículo: A. Gentry-Maharaj; O. Blyuss; A. Ryan; M. Burnell; C. Karpinskyj; R. Gunu; J. Kalsi; A. Dawnay; I.P. Mariño; R. Manchanda; K. Lu; W-L Yang; J.F. Timms; M. Parmar; S.J. Skates; R.C. Bast Jr; I. Jacobs; A. Zaikin; U. Menon, 2020, Multi-marker longitudinal algorithms incorporating HE4 and CA125 in ovarian cancer screening of postmenopausal women. Cancers 12(7), 1931.

5. Artículo: H.J. Whitwell; M.G. Bacalini; O. Blyuss; S. Chen; P. Garagnani; S.Y. Gordleeva; S. Jalan; M. Ivanchenko; O. Kanakov; V. Kustikova; I.P. Mariño; I. Meyerov; E. Ullner; C. Franceschi; A. Zaikin, 2020, The human body as a super network: digital methods to analyze the propagation of aging. Frontiers in Aging Neuroscience 12, 136.

6. Artículo: E. Koblents; I.P. Mariño; J. Míguez, 2019, Bayesian computation methods for inference in stochastic kinetic models. Complexity 2019, 7160934.

7. Artículo: S. Pérez-Vieites; I.P. Mariño; J. Míguez, 2018, Probabilistic scheme for joint

parameter estimation and state prediction in complex dynamical systems. Phys. Rev. E 98(6), 063305.

8. Artículo: O. Blyuss; M. Burnell; A. Ryan; A. Gentry-Maharaj; I.P. Mariño; J. Kalsi; R. Manchanda; J.F. Timms; M. Parmar; S.J. Skates; I. Jacobs; A. Zaikin; U. Menon, 2018, Comparison of longitudinal CA125 algorithms as a first-line screen for ovarian cancer in the general population, Clinical Cancer Research, 24/19, 4726-4733.

9. Artículo: M.A. Vázquez, I.P. Mariño; O. Blyuss; A. Ryan; A. Gentry-Maharaj; J. Kalsi; R. Manchanda; I. Jacobs; U. Menon; A. Zaikin, 2018, A quantitative performance study of two automatic methods for the diagnosis of ovarian cancer, Biomedical Signal Processing and Control, 46, 86-93.

10. Artículo: L. Lacasa; I.P. Mariño; J. Míguez; V. Nicosia; É. Roldan; A. Lisica; S.W. Grill; J. Gómez-Gardeñes, 2018, Multiplex decomposition of non-Markovian dynamics and the hidden layer reconstruction problem, Physical Review X, 8/3, 031038.

11. Artículo: J. Míguez; I.P. Mariño; M.A. Vázquez, 2018, Analysis of a nonlinear importance sampling scheme for Bayesian parameter estimation in state-space models, Signal Processing, 142, 281-291.

12. Artículo: I.P. Mariño; A. Zaikin; J. Míguez, 2017, A comparison of Monte Carlo-based Bayesian parameter estimation methods for stochastic models of genetic networks, PloS one, 12/8, e0182015.

C.2. Proyectos

1- PID2021-125159NB-I00, Space-time sequential schemes and Bayesian inference methods for continuous-time stochastic systems (ALDER), Office of Naval Research (award no. N00014-22-1-2647) Cuantificación de incertidumbre en modelos físicos estocásticos: filtros profundos y métodos de Monte Carlo espacio-temporales (TYCHE), AGENCIA ESTATAL DE INVESTIGACIÓN, IP: Míguez Arenas, Joaquín. Equipo: Inés Pérez Mariño, Joaquín Míguez Arenas y Manuel Alberto Vázquez López, 01/10/2022 - 30/09/2025, 279.814€.

2- PID2021-125159NB-I00, Uncertainty quantification for stochastic physical models: deep filters and space-time Monte Carlo methods (TYCHE), AGENCIA ESTATAL DE INVESTIGACIÓN, IP: Míguez Arenas, Joaquín y Vázquez López, Manuel Alberto. Equipo: Harold Molina Bulla, Antonio Artés Rodríguez, Javier López Santiago, Inés Pérez Mariño, Joaquín Míguez Arenas y Manuel Alberto Vázquez López 01/09/2022 - 31/08/2025, 350.000€.

3- RTI2018-099655-B-I00, Aprendizaje máquina y computación masiva para medicina personalizada y analisis cuantitativo del clima (CLARA), Agencia Estatal de Investigación, IP: Artés-Rodríguez, Antonio y Míguez Arenas, Joaquín. Equipo: Antonio Artes Rodríguez, Joaquín Míguez Arenas, Harold Yesid Molina Bulla, Javier López Santiago, Ignacio Peis Aznarte, Pablo Bonilla Escribano, Gonzalo Ricardo Ríos Muñoz, Inés Pérez Mariño y María Luisa Barrigón Estévez. 01/01/2019–31/12/2021, 124.509 €.

4- Cost Action CA18227, The Core Outcome Measures for Food Allergy, European Cooperation in Science & Technology IP: Daniel Munblit, 05/11/2019-04/11/2023, 520.000€

5- TEC2017-86921-C2-1-R, Gestión de cambios puntuales: sensado activo y aprendizaje conjunto, AGENCIA ESTATAL DE INVESTIGACIÓN, IP: Pérez Arriaga, Jesús. Equipo: Jesús Pérez Arriaga, Javier Vía Rodríguez e Inés Pérez Mariño, 01/01/2018 - 31/12/2020,

49.610€.

6- Contract No. 14.Y26.31.0026, Digital Personalised Medicine of Healthy Ageing (DPM_AGEING): network analysis of Big Multi-omics data to search for new diagnostic, prognostic and therapeutic targets, GOVERNMENT OF THE RUSSIAN FEDERATION, IP: Franceschi, Claudio, 01/01/2018 - 31/12/2020, 90 millones de rublos.

7- TEC2015-69868-C2-1-R, Métodos computacionales Bayesianos avanzados para estimación, predicción, y control en sistemas multisensoriales complejos (ADVENTURE), MINISTERIO DE ECONOMIA Y COMPETITIVIDAD, IP: Artés Rodríguez, Antonio y Míguez Arenas, Joaquín. Equipo: Antonio Artes Rodríguez, Joaquín Míguez Arenas, Ángel Bravo Santos, Fernando Pérez Cruz, Manuel Vázquez López, José Miguel Leiva Murillo, María Luisa Barrigón Estévez, Teresa Montojo Villasanta, Pablo Ávila Alonso e Inés Pérez Mariño. 19/05/2016- 31/12/2018, 314.600€.

C.3. Congresos

J. Míguez, H. Molina-Bulla, I.P. Mariño, *A sequential Monte Carlo method for parameter estimation in nonlinear stochastic pde's with periodic boundary conditions.* Proceedings of the 9th IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP 2023), pp. 87-90, ISBN: 979-8-3503-4452-3, Los Sueños, Costa Rica, December 2023.

I.P. Mariño, M.A. Vázquez, O. Blyuss, A. Ryan, A. Gentry-Maharaj, J. Kalsi, R. Manchanda, I. Jacobs, U. Menon, A. Zaikin, *Computational learning methods for early detection of ovarian cancer.* Emerging Topics in Artificial Intelligence (ETAI). Ponencia invitada, SPIE Optics+Photonics, San Diego, California. United States. Aug 1-5, 2021.

I.P. Mariño, L. Lacasa, J. Míguez, V. Nicosia, E. Roldan, A. Lisica, S.W. Grill, J. Gómez-Gardeñes, *Identifying the hidden multiplex architecture of biological processes*. Proceedings of the 9th International Scientific Conference on Physics and Control (PHYSCON 2019) pp. 187-191, ISBN: 978-5-00150-470-2. Ponencia invitada. Innopolis, Russia, September 2019.

J. Míguez, L. Lacasa, J.A. Martínez-Ordoñez, I.P. Mariño, *Multilayer models of random sequences: representability and inference via nonlinear population Monte Carlo*. Proceedings of the Eighth IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP 2019), pp. 629-633, ISBN: 978-1-7281-5549-4, Guadeloupe, West Indies, December 2019.

I.P. Mariño; M.A. Vázquez; O. Blyuss; A. Ryan; A. Gentry-Maharaj; J. Kalsi; R. Manchanda; I. Jacobs; U. Menon; A. Zaikin, Diagnoses of ovarian cancer based on longitudinal measurements of multiple biomarkers, Ponencia invitada, Volga Neuroscience Meeting 2018, Nizhny Novgorod (Russia), 2018.

I.P. Mariño; S. Pérez-Vieites, J. Míguez; Parameter estimation and state forecasting meteorological models, The 6th International Conference on Complex Networks and their Applications, Lyon (France), 178-180, 2017.

I.P. Mariño, A. Zaikin; J. Míguez, Parameter estimation in genetic networks, Complex Networks 2016, The 5th International Workshop on Complex Networks and their Applications, 151-153, Milan (Italia), 2016.

I.P. Mariño; D. Crisan; J. Míguez, Parameter estimation and tracking of the variables in a stochastic two-scale Lorenz 96 chaotic system, Dynamics Days 2016, XXXVI Dynamics Days Europe, 336, Corfú (Grecia), 2016.

Fecha del CVA	08/03/2024

Parte A. DATOS PERSONALES

Nombre	Gonzalo		
Apellidos	Miguez Macho		
Sexo	Hombre	Fecha de Nacimiento	
DNI/NIE/Pasaporte			
URL Web			
Dirección Email			
Open Researcher and Contributor ID (ORCID)	0000-0002-4259-7883		

A.1. Situación profesional actual

Puesto	Catedrático de Universidad		
Fecha inicio	2023		
Organismo / Institución	Universidade de Santiago de Compostela		
Departamento / Centro			
País		Teléfono	
Palabras clave	220000 - Física; 250100 - Ciencias de la atmósfera		

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora - indicar meses totales, según texto convocatoria-)

Periodo	Puesto / Institución / País
2010 - 2023	Profesor Titular de Universidad / Universidade de Santiago de Compostela
2005 - 2010	Investigador Ramón y Cajal / Universidad de Santiago de Compostela
2004 - 2005	Research Associate / Rutgers University
2001 - 2004	Postdoctoral Associate / Rutgers University
1995 - 2000	Graduate Research Assistant / University of Utah

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
PhD Meteorology	University of Utah	2000
Grado de Licenciado	Universidad de Santiago de Compostela	1995
Licenciado en Ciencias Físicas Especialidad Física Fundamental	Universidad de Santiago de Compostela	1994

Parte B. RESUMEN DEL CV

I obtained a bachelor's degree in Physics from the University of Santiago de Compostela in 1994, and did my PhD in Meteorology at the University of Utah, on atmospheric predictability on a global scale, under the supervision of Dr. Jan Paegle, a specialist in numerical modeling of the atmosphere, developer of global and regional models. I received a solid training in this specialty. After my doctorate in 2000, I worked as a postdoctoral researcher at Rutgers University (New Jersey), first in numerical downscaling and then in soil-vegetation and hydrology modeling. I returned to Spain in 2005 with a Ramón y Cajal fellowship, to the University of Santiago de Compostela, where I have been an associated professor since 2010 and full professor since 2023.

I have extensive experience in the use and development of both global and regional meteorological models for short-term and climate simulations and in the use of reanalysis databases. In particular, I have ample knowledge of the WRF mesoscale meteorological model and I collaborate regularly with the National Center for Atmospheric Research (NCAR) in the USA, in its development. I have implemented in this model the Newtonian relaxation technique

of the atmospheric large scales in the domain ("spectral nudging"). The module that activates this option is in the public version of the model since 2009 and is of great use throughout the regional climate modeling community. With an emphasis on an integrated representation of the hydrological cycle in regional and global climate modeling, I have also actively worked on the development and implementation of a soil and vegetation scheme that includes hydrology, with groundwater fully coupled to surface soil and rivers, in climate models. Currently this scheme, already endorsed by the numerous high-impact publications that have accompanied its development and applications, has been implemented in the NOAH-MP soil-vegetation model within WRF, with the collaboration of NCAR.

I am the author of 70 publications in high impact JCR journals and I have led several research projects of national and international competitive calls, as well as numerous company contracts, mainly in the wind energy sector. I have advised 8 PhD thesis (two more underway). Currently my scientific interest is focused on the global hydrological cycle, both in the atmosphere and in the soil and vegetation, and I actively collaborate with several international groups in these investigations

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con "peer review" y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

1 **Artículo científico**. Damián Insua-Costa; Martín Senande-Rivera; María Carmen Llasat; Gonzalo Miguez-Macho. 2022. A global perspective on western Mediterranean precipitation extremes.npj Climate and Atmospheric Science. 5-9.

2 **Artículo científico**. Martín Senande-Rivera; Damián Insua-Costa; Gonzalo Miguez-Macho. 2022. Spatial and temporal expansion of global wildland fire activity in response to climate change. Nature Communications. 13-1208.

3 **Artículo científico**. Miguez-Macho, Gonzalo; Fan, Ying. 2021. Spatiotemporal origin of soil water taken up by vegetation. Nature. 598-7882, pp.624-628.

4 **Artículo científico**. Prósper, Miguel A.; Otero-Casal, Carlos; Canoura Fernández, Felipe; Miguez-Macho, Gonzalo. 2019. Wind power forecasting for a real onshore wind farm on complex terrain using WRF high resolution simulations. Renewable Energy. 135, pp.674-686. ISSN 0960-1481.

5 **Artículo científico**. Insua-Costa, D.; Miguez-Macho, G.2018. A new moisture tagging capability in the Weather Research and Forecasting model:formulation, validation and application to the 2014 Great Lake-effect snowstorm. Earth System Dynamics. 9-1, pp.167-185.

6 **Artículo científico**. Fan, Ying; Miguez-Macho, Gonzalo; Jobbágy, Esteban G.; Jackson, Robert B.; Otero-Casal, Carlos. 2017. Hydrologic regulation of plant rooting depth. Proceedings of the National Academy of Sciences. 114-40, pp.10572-10577.

7 **Artículo científico**. Fan, Y.; Li, H.; Miguez-Macho, G.2013. Global Patterns of Groundwater Table Depth. Science. 339-6122, pp.940-943. ISSN 0036-8075.

8 **Artículo científico**. Fan, Ying; Miguez-Macho, Gonzalo; Weaver, Christopher P.; Walko, Robert; Robock, Alan. 2007. Incorporating water table dynamics in climate modeling: 1. Water table observations and equilibrium water table simulations. Journal of Geophysical Research: Atmospheres. 112-D10, pp.n/a-n/a. ISSN 2156-2202.

9 **Artículo científico**. Miguez-Macho, Gonzalo; Fan, Ying; Weaver, Christopher P.; Walko, Robert; Robock, Alan. 2007. Incorporating water table dynamics in climate modeling: 2. Formulation, validation, and soil moisture simulation. Journal of Geophysical Research: Atmospheres. 112-D13, pp.n/a-n/a. ISSN 2156-2202.

10 **Artículo científico**. Miguez-Macho, Gonzalo; Stenchikov, Georgiy L.; Robock, Alan. 2004. Spectral nudging to eliminate the effects of domain position and geometry in regional climate model simulations. Journal of Geophysical Research: Atmospheres. 109-D13, pp.n/a-n/a. ISSN 2156-2202.