



## CURRICULUM VITAE (CVA)

### Part A. PERSONAL INFORMATION

CV date

22/01/2025

First name	María Dolores		
Family name	Pérez Hernández		
Gender (*)	Female	Birth date:	24/05/1986
ID number	44719051-J		
e-mail	mdolores.perez@ulpgc.es	URL Web:	https://mdoloresperez.weebly.com
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-7293-9584		

(\*) Mandatory

### A.1. Current position

Position	Profesor Contratado Doctor		
Initial date	01/06/2021		
Institution	Universidad de Las Palmas de Gran Canaria		
Department/Center	Departamento de física. Instituto Universitario de Oceanografía y Cambio Global (IOCAG)		
Country	Spain	Teleph. number	928 45 44 91
Key words	Physical Oceanography, large-scale circulation, water masses, Meridional Overturning Circulation, boundary currents.		

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

Period (dd/mm/yyyy)	Position/Institution/Country/Interruption cause
15/07/2022 to present	Secretary of the Instituto de Oceanografía y Cambio Global (IOCAG), Universidad de Las Palmas de Gran Canaria (ULPGC)
1/06/2021 to present	Profesor Contratado Doctor, Universidad de Las Palmas de Gran Canaria (ULPGC)
26/05/2018 to present	Long-term Guest investigator, Woods Hole Oceanographic Institution (WHOI), U.S.A.
29/05/2021 – 22/10/2021	Maternity leave
12/04/2021 – 28/05/2021	Leave due to risk for the pregnancy
15/03/2021 – 31/05/2021	Prestige Doctors contract Viera y Clavijo, ULPGC
16/10/2019 – 14/03/2021	Postdoctoral investigator of the ULPGC program
4-9/06/2018 & 6-15/12/2018	Research Stay at Institute of Marine Research, Bergen, Norway
01/08/2017 – 01/10/2019	Researcher, Marine and Freshwater Research Institute, Iceland
6-18/12/2017 & 16-30/11/2018	Research Stay at WHOI
15/05/2015 – 26/05/2018	Postdoctoral Investigator, WHOI
01/05/2013 – 30/11/2013	Research Stay at National Oceanography Centre, Southampton, U.K.
01/04/2012 – 30/06/2012	Research Stay at Scripps Institution of Oceanography, University of California San Diego, U.S.A.
01/09/2011 – 30/11/2011	Guest investigator, WHOI
09/02/2011 – 24/0/2015	Ph.D. Student (Becaria de la Agencia Canaria de Investigación, Innovación, y Sociedad de la Información, ACIISI), ULPGC

### A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Ph.D. in Physical Oceanography	Universidad de Las Palmas de Gran Canaria, Spain	2015
Master in Oceanography	Universidad de Las Palmas de Gran Canaria, Spain	2011
Bachelor in Marine Science (Licenciada en Ciencias del Mar)	Universidad de Las Palmas de Gran Canaria, Spain	2009



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

**Scientific Contributions:** I have developed extensive skills including sea-going experience (>350 days at sea), data processing and analysis (**33 articles, 541 citations and h-index 18 in the WOS**), teamwork (participated in 18 research projects; 2 as Co-IP, 1 European, 1 bilateral DFG-AEI), capacity for disseminating research (more than **24 talks at scientific meetings; 7 as an invited speaker** and 14 at international meetings), and critical peer-reviewing skills (**13 reviewers for 5 journals** and the **AR6 IPCC report**). My competence (**2 sexenios and 2 years Investigador Destacado ULPGC**) has been recognized by international awards including: the [Kostas Nittis Medal from EUROGOOS](#) in 2019; a Complementary [EGU](#) membership in 2017, and an invitation to the NASA Goddard Space Flight Centre as an awardee of the [NASA-MPOWIR Speaker Series](#) in 2015.

My research topics are focused on the Atlantic Meridional Overturning Circulation (AMOC) and Atlantic Water at high latitudes and Indian Oceans. The wide scope of my research has helped me forge important collaborations with peers from Europe and the U.S.A. and to conduct research at several leading institutes. Highlighting the main findings relevant to the project: My contributions on the Indian Ocean and south Atlantic have helped to understand the [cross-equatorial circulation in the Indian Ocean](#), the [changes in the Subantarctic and polar fronts, to describe the circulation at 24-34.5°S](#) and to describe an [Agulhas ring](#). As for studies related to the AMOC I have contributed to a [full-Atlantic study using inverse box models to understand decadal changes of the AMOC](#), [its horizontal circulation](#), and a [sensitivity analysis of the methodology](#). At the North Atlantic Subtropical Gyre I used an inverse box model to unveil [the source of the Canary Current](#), its [seasonality](#) and to [link the seasonal cycle of the AMOC to that of the Canary basin](#) (collaboration with NOC). In this area I also collaborated in several other manuscripts to describe, the [a wind-driven model for the seasonal cycle of the AMOC and Canary basin](#) and [the AMOC transports between 7.5-24.5°N for the years 1992-93 and 2010-2011](#). Last but not least, one of my most cited contributions have been to develop [a 16-point index to describe the meridional shifts of the Gulf Stream](#) from altimetry (collaboration with WHOI)

On the other side, I have also been working with Atlantic Water North of Svalbard my main contributions have been to: [provide with the first view of the current](#) and with [a one-year long time series to describe the seasonality of the boundary current](#) (collaboration with WHOI). To further understand this area, I collaborated with researchers from Norway on [including heat fluxes to our description](#) and with researchers the university of la Sorbonne using a model to disclose the [areas where convection was taking place interannually](#) and the [new circulation routes of Atlantic Water North of Svalbard](#).

Finally, I want to highlight also four interdisciplinary studies focussed in [phytoplanktonic communities around Iceland](#), [carbon budgets on the eastern boundary of the Atlantic](#) and [nitrogen fixation](#) along 24°N and [across different dynamical structures](#) (published in Nature Geoscience).

**Outreach:** I maintain a [blog](#) and a [twitter](#) with my latest research news. I am part of the [Mujeres Científicas Canarias](#) project, a project that brings female researchers to public schools and high schools to communicate about their career and field. I created the [Ciencia Compartida seminars](#) 2012-2014 where the studies carried out by researchers at the university were disseminated throughout the university and eventually visiting high schools. I am also involved in the different transfer activities managed by the [office of research results transfer \(OTRI\)](#) such as in seminars that take place in museums and aquariums or interacting with the media, or the open doors days.

**Contributions to the new generations:** I have successfully [mentored](#) 1 Ph.D. (currently postdoc at Georgia Tech), 7 Master students and 5 undergrad students on their final projects (all graded higher than 8). Currently I have 2 Ph.D. students that will defend in 2025, one of which has already a work contract at the Barcelona Supercomputing Center. I have also been part of two defence committees at the University of la Sorbonne and one at the University of Bergen. I have taught a total of 954 hours taught in the several Engineering Degrees (Physics I and II, Fluid Mechanics), the DOYCAG-ULPGC Ph.D. program (Matlab & R), the Master in Oceanography (Physical Processes) and the Marine Science Degree (Introduction to Matlab). In addition, created and taught a course for all ULPGC Ph.D. students named [“Preparing ourselves for the postdoctoral stage”](#) which aims to teach students how the application process is carried in teaching, research and industry and it has gone through 3 editions. I am part of the Educational Innovation Group [‘Designing HANDS-ON challenges for incoming students’](#) and we got funded the project [CHALLENGINE](#) that aims to create a competition to build engines in Physics II.



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

### C.1. Publications (since 2020, \*Publications from students I have mentored.)

- D. Santana-Toscano\*, **M.D. Pérez Hernández**, C. Arumí-Planas, A. Hernández-Guerra (2025). Estimating the western North Atlantic Subtropical Gyre zonal currents in 2021 through Single-and Three-Box Inverse Models. *Progr.Oceanogr.* Doi: 10.1016/j.pocean.2025.103415
- M. A. Gutiérrez-Guerra\*, **M.D. Pérez Hernández**, P. Vélez-Belchí, A. Hernández-Guerra (2024). A new index to determine changes on the Eastern Boundary Upwelling Systems under Climate Change. *Ocean Sci.* doi:10.5194/egusphere-2024-389
- C. Hoerstmann, B.M. Aguiar-González, S. Barrillon, C. Capaneto Bastos, O. Grosso, **M.D. Pérez Hernández**, A.M. Doglioli, A.A. Petrenko, M. Benavides (2024). Nitrogen fixation in the North Atlantic supported by Gulf Stream eddy-borne diazotrophs. *Nat.Geosci.*, 17, 1141-1147 (2024). doi: 10.1038/s41561-024-01567-2
- D. Santana-Toscano\*, **M.D. Pérez Hernández**, A. Macdonald, C. Arumí-Planas, V. Caínzos, A. Hernández-Guerra (2023). Zonal Circulation in the North Atlantic Ocean at 52°W from WOCE-WHP and CLIVAR sections: 1997, 2003 and 2012. *Progr.Oceanogr.* 216, 103069. doi: 10.1016/j.pocean.2023.103069
- V.Caínzos\*, A. Hernández-Guerra, Ricardo Farneti, **M.D. Pérez Hernández**, L. Talley (2023). Mass, Heat and Freshwater transport from transoceanic sections in the Atlantic Ocean at 30°S and 24.5°N: Single sections vs Box Models? *Geophys.Res.Lett.* 50, e2023GL103412. Doi:10.1029/2023GL103412
- M. Cerfonteyn\*, R. Groben, D. Vaultot, K. Guðmundsson, P. Vannier, **M.D. Pérez Hernández**, V. Þór Marteinsson (2023). The distribution and diversity of eukaryotic phytoplankton in the Icelandic marine environment. *Sci. Rep.*, 13, 8519. Doi: 10.1038/s41598-023-35537-2
- C. Arumí-Planas\*, **M.D. Pérez Hernández**, J.L. Pelegrí, P. Vélez-Belchí, M. Emelianov, V. Caínzos, L. Cana-Cascallar, Y. Firing, L. García-Weil, D. Santana-Toscano, A. Hernández-Guerra (2023). The South Atlantic Circulation between 34.5°S and 24°S and above the Mid-Atlantic Ridge from an Inverse Box Mode. *J.Geophys.Res.-Oceans*, 128, e2022JC019614. Doi: 10.1029/2022JC019614
- V. Caínzos\*, **M.D. Pérez Hernández**, D. Santana-Toscano, C. Arumí-Planas, A. Hernández-Guerra (2023). Consistent picture of the horizontal circulation of the Atlantic Ocean over three decades. *Ocean Sci.* 19, 1009–1045. Doi: 10.5194/os-19-1009-2023
- M.D. Pérez Hernández**, et al. (2023). The Seasonal cycle of the eastern boundary currents of the North Atlantic Subtropical Gyre. *J.Geophys.Res.-Oceans*, 128, e2022JC019487. Doi: 10.1029/2022JC019487.
- V. Caínzos\*, A. Hernández-Guerra, G.D. McCarthy, E.L. McDonagh, M. Cubas Armas, & **M.D. Pérez-Hernández**, (2022). Thirty years of GOSHIP and WOCE data: Atlantic overturning of mass, heat, and freshwater transport. *Geophys.Res.Lett.*, 49,e2021GL096527. Doi:[10.1029/2021GL096527](https://doi.org/10.1029/2021GL096527)
- J.P. Siemer, F. Machín, A. González-Vega, J.M. Arrieta, M. A. Gutiérrez-Guerra, **M.D. Pérez-Hernández**, P. Vélez-Belchí, A. Hernández-Guerra, and E. Fraile-Nuez (2021). Recent trends in SST, Chl-*a*, productivity and wind speed in upwelling and open ocean areas in the upper Eastern North Atlantic subtropical gyre. *J.Geophys.Res.-Oceans*, 126, e2021JC017268. Doi: 10.1029/2021JC017268
- P. Vélez-Belchí, V.Caínzos, E. Romero, Casanova-Masjoan, C. Arumí-Planas, D. Santana-Toscano, A. González-Santana, **M.D. Pérez-Hernández** and A. Hernández-Guerra (2021). The Canary intermediate poleward undercurrent: not another poleward undercurrent in an eastern boundary upwelling system. *J. Phys.Oceanogr.*, 51(9), 2973-2990. Doi: 10.1175/JPO-D-20-0130.1
- M. Athanase\*, C. Provost, C. Artana, **M.D. Pérez-Hernández**, N. Sennéchael, C. Bertosio, G. Garric, J.M. Lellouche, and P. Prandi (2020). Changes in atlantic water circulation patterns and volume transports north of svalbard over the last 12 years (2008-2020). *J.Geophys.Res.-Oceans*, 126, e2020JC016825. Doi:10.1029/2020JC016825
- M., Athanase\*, C., Provost, **M.D., Pérez-Hernández**, N. Sennéchael, C. Bertosio, C. Artana, G. Garric, and J.M. Lellouche (2020). Atlantic Water modification North of Svalbard in the Mercator



Physical System from 2007 to 2020. *J.Geophys.Res.-Oceans*, 125, e2020JC016463. [Doi: 10.1029/2020JC016463](https://doi.org/10.1029/2020JC016463)

M. Casanova-Masjoan\*, **M.D. Pérez-Hernández**, R.S. Pickart, H. , (...), A. Hernández-Guerra (2020). Alongstream, seasonal and interannual variability of the North Icelandic Irminger Current and East Icelandic Current around Iceland. *J.Geophys.Res.-Oceans*. 125, e2020JC016283. [doi:10.1029/2020JC016283](https://doi.org/10.1029/2020JC016283)

M. Casanova-Masjoan\*, **M.D. Pérez-Hernández**, P. Vélez-Belchí, L. Cana, A. Hernández-Guerra (2020). Variability of the Canary Current diagnosed by inverse box models. *J.Geophys.Res.-Oceans*. 125, e2020JC016199. [Doi:10.1029/2020JC016199](https://doi.org/10.1029/2020JC016199)

## C.2. Congress (since 2020)

### Invited Speaker:

1. **Event:** kick-off meeting of the EuroSEA Horizon 2020. **Place and date:** Brussels, November 28<sup>th</sup>, 2020. **Title:** EUROGOOS Kostas Nittis Medal: My research career. **Authors:** M. Dolores Pérez Hernández

### Organizing international meetings

1. **Event:** 21<sup>st</sup> Arctic and Subarctic Ocean Fluxes Meeting. **Place and date:** Gran Canaria, May 10-12, 2023. **website:** <https://asof.awi.de/> **Link to the book of abstracts:** [https://spdc.ulpgc.es/libro/arctic-subarctic-ocean-fluxes-workshop-21o-2023-las-palmas-de-gran-canaria\\_149793/](https://spdc.ulpgc.es/libro/arctic-subarctic-ocean-fluxes-workshop-21o-2023-las-palmas-de-gran-canaria_149793/)

### Talks at meetings:

1. **Event:** Encuentro en Oceanografía Física Española. **Place and date:** Valencia, 10- 12July, 2024. **Organizing entity:** Universidad Católica de Valencia. **Title:** *The seasonal cycle of the eastern boundary currents of the North Atlantic Subtropical Gyre.*
2. **Event:** Ocean Science Meeting 2024. **Place and date:** New Orleans, Louisiana, 18-23 de Febrero 2024. **Organizing entity:** American Geophysical Union. **Title:** *The seasonal cycle of the eastern boundary currents of the North Atlantic Subtropical Gyre.*
3. **Event:** Meeting AMOC observation needs in a changing climate. **Place and date:** University of Hamburg, 18-20 July 2023. **Organizing entity:** EPOC project and University of Hamburg. **Title:** *The seasonal cycle of the eastern boundary currents of the North Atlantic Subtropical Gyre.*
4. **Event:** IUGG-IAPSO. **Place and date:** Berlin, 11-20 July 2023. **Organizing entity:** IUGG-IAPSO. **Title:** *Eddy flux of Atlantic Water to the Eurasian Basin North of Svalbard.*
5. **Event:** Kick off meeting of the MAC-CLIMA project. **Place and date:** Las Palmas de Gran Canaria, June 8th, 2020. **Organizing entity:** Cabildo de Gran Canaria, Consejo Insular de energía. **Title:** *Sustained raise of the oceanic temperature on the Canary Basin.*

### Posters at International meetings:

1. **Event:** Arctic-Subarctic Ocean Fluxes. **Place and date:** Dalhousie University, 30 April 2nd May, 2024. **Organizing entity:** Arctic-Subarctic Ocean Fluxes, Dalhousie University. **Title:** *A synoptic view of the FAR-DWO cruise.*

## C.3. Research projects.

1. **Reference:** PCI2024-155084-2. **Title:** Denmark Strait – Mixing and Sediment Dynamics (DS-MIXSED). **Funding Agency:** Proyecto bilateral DFG-AEI. **PI:** Eleanor Frakja-Williams. **Principal Organization:** Universidad de Las Palmas de Gran Canaria. **Dates:** 2025- to 2028. **Role:** Investigator Principal de Proyecto coordinado.
2. **Reference:** PID2022-139403NB-C21. **Title:** South Atlantic Connections (SACO). **Funding Agency:** Agencia Española de Investigación (AEI). **PI:** Alonso Hernández Guerra. **Principal Organization:** Universidad de Las Palmas de Gran Canaria. **Dates:** 2023- to 2026. **Role:** co-Investigador Principal.
3. **Reference:** Not applicable. **Name of the project:** Fine scale dynamics of diazotrophs in the ocean (FIESTA). **Funding Agency:** Agence National de Recherche (ANR). **PI:** Mar



Benavides. **Principal Organization:** Merditerranean Institute of Oceanography. **Dates:** 2021- to 2024. **Role:** Research team.

1. **Reference:** Not applicable. **Name of the project:** Fine scales shapping nitrogen fixation in the Gulf stream (FIGURE). **Funding Agency:** EuroFleets plus Regional programme. **PI:** Mar Benavides. **Principal Organization:** Merditerranean Institute of Oceanography. **Dates:** 2022- to 2022. **Role:** Research team.
2. **Reference:** Not applicable. **Name of the project:** BACI project: The Argentine Basin, a Case study for the Integrated ocean observing system. **Funding Agency:** Centre National D'Études Spatiales. **PI:** Camila Artana. **Principal Organization:** Mercator Ocean. **Dates:** 2021- to 2024. **Role:** Research team.
3. **Reference:** RTI2018-100844-B-C31. **Name of the project:** The South Atlantic Gateway in the global conveyor belt (SAGA). **Funding Agency:** Spanish Ministry of Economy, Industry and Competition. **PI:** Jose Luis Pelegrí. **Principal Organization:** Spanish National Research Council (CSIC). **Dates:** 2019- to 2021. **Role:** Research team.

#### C.4. Transfer of Knowledge (last 5 years).

##### Publications:

M. Díaz, P. J. Rodríguez de Rivera Socorro, **M.D. Pérez Hernández** (2025). Transforming university physics education: The challenge of building to learn. *Mapping ignorance*. [mappingignorance.org/2025/01/13/transforming-university-physics-education-the-challenge-of-building-to-learn/](https://mappingignorance.org/2025/01/13/transforming-university-physics-education-the-challenge-of-building-to-learn/)

##### Talks:

Mesa redonda: Condiciones meteorológicas extremas, AMOC, El Niño y puntos de inflexión climáticos. Foro Internacional Ecoislas. Jueves 30 de enero de 2025.

Canarias ante la previsible alteración de la Corriente del Atlántico Norte (AMOC). Jueves 11 de abril 2024. Sociedad Económica de amigos del País de Santa Cruz de La Palma.

Canarias ante la previsible alteración de la Corriente del Atlántico Norte (AMOC). Jueves 7 de marzo 2024. Sociedad Económica de amigos del País de Santa Cruz de Las Palmas de Gran Canaria.

##### Media:

2024. 300 canari@s En primera línea. Quién es quién en Canarias 2024: sociedad. Noticia del [periódico Canarias 7](#).

2024. Las Aguas Canarias están ya a 21.5 grados, la temperatura prevista para final de siglo. Noticia en el [periódico Canarias7](#).

2024. La temperatura del mar en Canarias acusa una subida cercana a 1.8 grados. Noticia en el [periódico El día. La opinión de Tenerife](#).

2024. La temperatura del mar en Canarias acusa una subida cercana a 1.8 grados. Noticia en el [periódico La Provincia. Diario de Las Palmas](#).

2023. Expertos en oceanografía física abordan en Gran Canaria el Estado del ártico. Noticia en el [periódico La Provincia. Diario de Las Palmas](#).

2023. El cambio climático se debe principalmente a causas antropogénicas. Noticia en el [periódico El día. La opinión de Tenerife](#).

2023. El calentamiento del Ártico tiene un impacto directo en Canarias. Noticia del [Canarias 7](#).

2023. Olas de Calor. [TVE](#)

2023. [La Mirilla. Magcín de Radio Agüimes](#)

2020. La ciencia teme entrar en cuarentena. Noticia en el [periódico El día. La opinión de Tenerife](#).

2020. Participación en el programa de Radio "Roscas y Cotufas" de [Canarias Radio](#).

2020. La ONU ficha a Dolores Pérez investigadora de la ULPGC para el Panel del Cambio Climático. Noticia de la [la Provincia. Diario de Las Palmas](#).

2020. Una científica de la ULPGC, en el panel de cambio climático de la ONU. Noticia del [periódico Canarias7](#).

2020. Dolores Pérez, dela ULPGC, elegida revisora del Panel de Cambio climático. Periódico [La Vanguardia](#).