MINISTERIO DE CIENCIA E INNOVACIÓN

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	11/Feb/2025

First name	FERNANDO JAVIER		
Family name	MENDEZ INCERA		
Gender (*)	MALE	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail	mendezf@unican.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-5005-1100	

(*) Mandatory

A.1. Current position

Position	Full Professor			
Initial date	April 2022			
Institution	Universidad de Cantabria			
Department/Center	Ciencias y Tecnicas del Agua y del Medio Ambiente	ETS. Ingenieros Caminos Canales y Puertos		
Country	SPAIN		Teleph. number	
Key words	Coastal Engineering – Climate Variability – Data Science			

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

Period	Position/Institution/Country/Interruption cause
January 2009 – March 2022	Associate Professor /UC/ Spain
October 2007 – Dec 2008	Profesor Contratado Doctor /UC/Spain
October 2003 – Sep 2007	Ramon y Cajar Researcher /UC/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD Civil Engineering	Universidad de Cantabria / Spain	1997
Master Civil Engineering	Universidad de Cantabria / Spain	1994

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

Fernando J. Méndez (FJM) is a Doctor in Civil Engineering since 1997. FJM is Full Professor of Hydralic Engineering at Universidad de Cantabria. FJM has been the head of the Marine Climate and Climate Change Group of the Environmental Hydraulic Institute (IHCantabria) until July 2015. Since then, he is the head of the research group “Geomatics and Ocean Engineering” from Universidad de Cantabria. He has supervised 15 PhD students between 2008 and 2025. He is now co-supervising 1 PhD student from University of Canterbury (NZ) and 2 PhD students from Universidad de Cantabria. Seven of the of the doctoral thesis directed have obtained awards (2 extraordinary from UC, 1 ANCI, 2 Modestos Vigueras of Coastal and Port Engineering, 1 Consejo Social from UC, 1 Dean List Award at Univ. of Auckland, NZ).

FJM has obtained the Research Award “Consejo Social 2020” of Universidad de Cantabria. FJM has five 6-year research terms (4 in research and 1 in technical transfer).

H-index: 42 (h=40 without self-citing). Total citations: 6507. Mean citation/year (2017-2022): 650, Total publication in first quartile Q1: 95, Total papers in SCI: 131. FJM has been PI of several Spanish and international projects related with marine climate. His research lines are focused on building knowledge to incorporate CLIMATE and DATA SCIENCE in COASTAL ENGINEERING (databases of marine variables, statistical models of extremes, data mining, statistical downscaling, climate variability, dynamical downscaling, flooding and coastal erosion).

Since July 2015, he has developed strong scientific relationships with different universities and institutions, formalized with collaboration agreements: HR Wallingford (UK), United States Geological Survey (USGS), Oregon State University (USA), SCRIPPS (USA), University of Auckland (NZ), Kyoto University (Japan), Duke University (USA), University of Southampton (UK), SPC (Fiji), Universidad Federal de Santa Catarina (Brazil), CSIRO (Australia), UNSW (Australia), Univ. of Sydney (Australia). In addition, during the last years FJM is conducting many capacitation courses in different universities and research institutes with the aim of transferring the building knowledge about marine climate and coastal climate change (coastal flooding and coastal erosion) gained on his career.

Part C. RELEVANT MERITS

C.1. Publications *(publications in Topics Waves, Sea Level, Flooding, Erosion, Extremes)*

Camus, P., Mendez, F.J., Medina, R., Tomás, A., Izaguirre, C. (2013) High resolution downscaled ocean waves (DOW) reanalysis in coastal areas, Coastal Engineering, 72, 56-68.

Izaguirre, C., Méndez, F.J., Espejo, A., Losada, I.J., Reguero, B.G. (2013) Extreme wave climate changes in Central-South America, Climatic Change, DOI 10.1007/s10584-013-0712-9.

Gouldby, B., Mendez, F.J., Guanche, Y., Rueda, A., Minguez, R. (2014) A methodology for deriving extreme nearshore sea conditions for structural design and flood risk analysis, Coastal Engineering, 88, 15-26

Camus P.; M. Menendez; F. Mendez; C. Izaguirre; A. Espejo; V. Canovas; J. Perez; A. Rueda; I. Losada; R. Medina (2014). A weather-type statistical downscaling framework for ocean wave climate. Journal of Geophysical Research. 119 - 11, pp. 7389 - 7405.

Camus P.; F. Mendez; I. Losada; M. Menendez; A. Espejo; J. Perez; A. Rueda; Y. Guanche (2014). A method for finding the optimal predictor indices for local wave climate conditions. Ocean Dynamics. 64, pp. 1025 - 1038.

Perez, J., Menéndez, M., Méndez, F.J., Losada, I.J. (2014) ESTELA: A method for evaluating the source and travel-time of the wave energy reaching a local area. Ocean Dynamics, DOI 10.1007/s10236-014-0740-7.

Perez, J., Menéndez, M., Méndez, F.J., Losada, I.J. (2014). Evaluating the performance of CMIP3 and CMIP5 global climate models over the north-east Atlantic region, Climate Dynamics, DOI 10.1007/s00382-014-2078-8.

Reguero, B. Losada, I.J., Méndez, F.J. (2015), A global wave power resource and its seasonal, interannual and long-term variability, Applied Energy, 148, 366-380.

Diaz-Hernández, G. Méndez, F.J., Losada, I.J., Camus, P., Medina, R. (2015) A nearshore long-term infragravity wave analysis for open harbours, Coastal Engineering, doi:10.1016/j.coastaleng.2014.12.009

Tomas, A., Mendez, F.J., Medina, R., Jaime, F.F., Higuera, P., Lara, J.L., Ortiz, M.D., Alvarez de Eulate, M.F., (2015) A methodology to estimate wave-induced coastal flooding hazard maps in Spain, Journal of Flood Risk Management, DOI: 10.1111/jfr3.12198

Rueda, A., Gouldby, B., Mendez, F.J., Tomás, A., Losada, I.J., Lara, J.L., Diaz-Simal, P. (2015) The use of wave propagation and reduce complexity inundation models and meta-

models for coastal flood risk assessment, Journal of Flood Risk Management, DOI: 10.1111/jfr3.12204
Reguero, B.G., Losada, I.J., Diaz-Simal, P., Mendez, F.J., Beck, M.W. (2015) Effects of Climate Change on Exposure to Coastal Flooding in Latin America and the Caribbean, PloS ONE, DOI: 10.1371/journal.pone.0133409
Cid, A., Menendez, M., Castanedo, S., Abascal, A.J., Mendez, F.J., Medina, R. (2015) Long-term changes in the frequency, intensity and duration of extreme storm surge events in southern Europe, Climate Dynamics, DOI 10.1007/s00382-015-2659-1.
Antolinez, J.A.A., Mendez, F.J., Camus, P., Vitousek, S., Gonzalez, E.M., Ruggiero, P., Barnard, P. (2016) A Multi-scale Climate Emulator for Long-term Morphodynamics (MUSCLE-morpho), Journal of Geophysical Research, 10.1002/2015JC011107
Rueda, A., Camus., P., Tomás, A., Vitousek, S., Méndez, F.J (2016). A multivariate extreme wave and storm surge climate emulator based on weather patterns. Ocean Modelling 10.1016/j.ocemod.2016.06.008
Rueda, A., Hegermiller, C.A., Antolinez, J.A.A., Camus., P., Vitousek, S., Ruggiero, P., Barnard, P., Erikson, L. H., Tomás, A., Méndez, F.J (2017). Multiscale Climate Emulator of Multimodal Wave Spectra: MUSCLE-spectra. Journal of Geophysical Research, 10.1002/2016JC011957
Rueda, A., Vitousek, S., Camus, P., (...), Reguero, B.G., Mendez, F.J. (2017) A global classification of coastal flood hazard climates associated with large-scale oceanographic forcing, Scientific Reports, 7(1), 5038.
Antolínez, J.A.A.; Murray, A.B.; Méndez, F.J.; Moore, L.; Farley, G.; Wood, J. (2018) Downscaling Changing Coastlines in a Changing Climate: The Hybrid Approach, Journal of Geophysical Research: Earth Surface, 10.1002/2017JF004367
Anderson, D., Rueda, A., Cagigal, L., Antolinez, J. A. A., Mendez, F. J., & Ruggiero, P. (2019). Time-varying emulator for short and long-term analysis of coastal flood hazard potential. Journal of Geophysical Research: Oceans, 124. https://doi.org/ 10.1029/2019JC015312
Reguero, B.G., Losada, I.J., Mendez, F.J. (2019) A recent increase in global wave power as a consequence of oceanic warming, Nature Comm., https://doi.org/10.1038/s41467-018-08066-0
Winter, G., … Mendez, F., Rueda, A., Wandres, M. (2020). Steps to Develop Early Warning Systems and Future Scenarios of Storm Wave-Driven Flooding Along Coral Reef-Lined Coasts. Frontiers in Marine Science. 7-199. https://doi.org/10.3389/fmars.2020.00199
Montaño, J., …, Mendez,F.J., …et al (2020) Blind testing of shoreline evolution models, Scientific Reports, https://doi.org/10.1038/s41598-020-59018-y
Silva, A.P., Klein, A.H.F., Fetter Filho, A.F.H., Hen, C.J., Mendez, F.J., Broggio, M.F., Dalinghaus, C. (2020) Climate-induced variability in South Atlantic wave direction over the past three millennia, Scientific Reports, https://doi.org/10.1038/s41598-020-75265-5
Cagigal, L., Rueda, A., Anderson, D., Ruggiero, P., Merrifield, M., Montaño, J., Coco, G., Mendez, F.J. (2020) A multivariate, stochastic, climate-based wave emulator for shoreline change modelling, Ocean Modeling, 154:101695.

C.3. Research projects

European Projects:

1. Knowledge-base and tools for regional networks of MPAs, integrated management of activities together with assessment of wind energy potential in the Mediterranean and the Black Sea COCONET, Union Europea, 2012-2015. IP: Ferdinando Boero (CONISMA), € 106,600, Investigador, Responsable tarea “Impactos cambio climático en las MPAs del mediterráneo”.

2. Innovative coastal technologies for safer european coasts in a changing climate (THESEUS)”, (FP7-ENV-2009-1-244104) Unión Europea, 2009-2013, IP: Raúl Medina, (Universidad de Cantabria), 366.204 €, Investigador. Responsable Tarea “Flooding and Erosion”.

National Projects:

1. An efficient hybrid tool to assess the effect of adaptation measures to climate change in estuaries and bays, Ministerio de Ciencia, Innovación y Universidades, 2024-2026, PID2022-141181OB-I00, Universidad de Cantabria, 125.000 €, IPs: Sonia Castanedo, Fernando Méndez

2. Adaptación al Cambio Climático: Sistema Integrado de Predicción de Inundación en Playas, Ministerio de Ciencia, Innovación y Universidades, 2020-2022, PID2019-107053RB-I00, Universidad de Cantabria, 115.000 €, IPs: Sonia Castanedo, Fernando Méndez

3. Análisis Climático Multiescala de Inundación y Erosión Costera (MUSCLE-Beach), Ministerio de Economía, Industria y Competitividad, 2015-2017, (BIA2014-59643-R), (Universidad de Cantabria), 113.740 €, Investigador Principal.

4. Caracterización Climática del Medio Físico Marino Español para la Optimización de la Explotación Portuaria y Navegación Marítima (MARUCA), MINISTERIO DE FOMENTO, 2010-2012, (E17/08) (Universidad de Cantabria), 1.348.000 €, Investigador Principal.

5. Estudio de Obtención de Energía del Oleaje en el litoral Español: recursos disponibles y optimización de los sistemas de explotación, GALERNA (ENE2004-08172/ALT), Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica 2004-2007 (Ministerio de Educación y Ciencia). Fechas: del 13/12/2004 al 12/12/2007. Cuantía de Subvención: 120.000,00 €, Investigador Principal

C.4. Contracts, technological or transfer merits

1. Impact Forecasting Consultancy Services – Samoa/Tonga, FJ-SPC-157811-CS-QCBS. Funded by World Bank, 2020-2022, UC, 1.350.000 USD, IP: Fernando Méndez

2. Reducing flood inundation hazard and risk across Aotearoa-New Zealand, Funded by New Zealand Government, ENDEAVOUR CALL. 2020-2024., IP NIWA: Emily Lane, IP UC: Fernando Méndez, Total Proyecto: 15.000.000 NZD, UC: 160.000 NZD

3. Flooding Risk Assessment in Majuro (Republic of Marshall Islands), IP Fernando Mendez (UC) Funded by World Bank, 2019-2020, $200.000

4. Cooperative agreement between USGS and Universidad de Cantabria “Developing Techniques for Assessing Coastal Hazards and Impacts of Climate Change”, IPs Fernando Mendez (UC) y Patrick Barnard (USGS), 2015-2019, $300.000

5. Weather Related Coastal Impacts to Climate Change, funded by the Natural Hazards Research Platform of New Zealand, PI Giovanni Coco (Univ. Auckland). Position: responsable Task related to high resolution waves and surge, 2016-2019, $40.000

6. Advancing Best Practices for the Analysis of the Vulnerability of Military Installations in the Pacific Basin to Coastal Flooding under a Changing Climate. Funded by the US Department of Defense. PI: John Marra (NOAA). Position: Methodology, Climate emulator, 2016-2020, $300.000.

7. Defense Regional Sea Level (DRSL) Database Transformation and Update, 2023-2027, Environmental Security Technology Certification Program, Department of Defense, USA, IP: Mark Merrifield (SCRIPPS, USA), $ 1,5000,000, Investigador responsable en UC