CV Date	14/01/2025

Part A. PERSONAL INFORMATION

First Name	Swen		
Family Name	Brands		
Sex	Not Specified	Date of Birth	
ID number Social Security, Passport			
URL Web	https://www.researchgate.net/profile/Swen-Brands		
Email Address			
Open Researcher and Contributor ID (ORCID)	0000-0002-3254-0277		

A.1. Current position

Job Title	postdoctoral researcher		
Starting date	2023		
Institution	Consejo Superior de Investigaciones Científicas		
Department / Centre	Climate and Data Science / Instituto de Física de Cantabria		
Country	Spain	Phone Number	(0034) 942202086 - 018
Keywords	Climatology		

A.2. Previous positions (Research Career breaks included)

Period	Job Title / Name of Employer / Country
2015 - 2023	graduated + postdoc / MeteoGalicia, Dpt. of Numerical Prediction
2011 - 2015	graduated / Consejo Superior de Investigaciones Científicas
2009 - 2011	graduated / Universidad de Cantabria

A.3. Education

Degree/Master/PhD	University / Country	Year
Programa Oficial de Posgrado en ciencias, tecnología y computación	Universidad de Cantabria / Spain	2017
Magister Artium	RWTH Aachen / Germany	2009

Part B. CV SUMMARY

I hold a first-class Magister degree from RWTH Aachen University (Germany) with the main subject Physical Geography, equivalent to the Bachelor plus Master degrees, obtained in September 2009. Funded by a Leonardo grant, I developed my Magister thesis at the Galician Meteorological Office (MeteoGalicia) in Santiago de Compostela. In this work I provided the first regional climate change projections for the northwestern Iberian Peninsula based on statistical downscaling methods, which were later published in a research article (Brands et al. 2011b). From November 2009 to October 2012, I was contracted by the University of Cantabria to work in the ESTCENA project, dedicated to the generation of climate change projections for the Iberian Peninsula based on statistical downscaling methods. From November 2011 to June 2015, I was hired by the Instituto de Física de Cantabria (IFCA, CSIC-UC) by means of CSIC's JAE-PREDOC program to develop my PhD thesis, which I finished in 2017 while working at MeteoGalicia. During these years I developed three independent research lines dedicated to 1. the evaluation of global climate models (GCMs, Brands et al 2011a, Brands et al. 2013), 2. climate teleconnections (Brands et al. 2012, Brands 2013, Brands et al. 2014, Brands 2014) and 3. atmospheric river research (see my PhD thesis and Brands et al. 2017). I also actively participated in the EU-Cost action VALUE, chaired by Douglas Maraun (Soares et al. 2019), and accomplished two research stays at EPhysLab, UVigo (Lorenzo et al. 2016) and at the Nonlinear Physics Group, USC (Eiras et al. 2016). In July 2015, I was contracted by MeteoGalicia's Department of Numerical Prediction and Investigation. In addition to developing and supervising their numerical model chain, I continued pursuing the 3 aforementioned research lines (Brands 2017, Ummenhofer et al. 2017) and opened a fourth

research line dedicated to numerical air chemistry modelling, which led to the development of the official, fully operational air quality prediction system of the Xunta de Galicia (Brands et al. 2020). I also developed the regional climate change visualization tool of the Xunta de Galicia and supervised the traineeships of 8 undergraduate and graduate students. In 2018, as the only person from Spanish research institutes, I was invited to participate in the intercontinental research initiative ARTMIP, lead by NCAR (Rutz et al. 2019, O'Brien et al. 2020), and my efforts there are still going on (Rush et al. 2025). At the same time, I largely extended my GCM evaluation research line in terms of considered methods and data, which led to 3 publications (Brands 2022a, Brands 2022b, Brands et al. 2023) and to an invitation to participate in the GCM evaluation task team of the EURO-CORDEX initiative. In April 2023 I returned to IFCA, where I am working as scientific coordinator and programmer of the Spanish PTI Climate project, as a programmer in the EU I4C project, and as an advisor of the Spanish projects TED2021-130702B-I00 and PID2023-150234NB-I00. I am an evaluator of research proposals sent to the German Research Foundation. I have published 5 scientific articles as a single author, another 10 as the first author (plus 2 submitted), and another 15 as a co-author. A complete list of my scientific production is available from ORCID.

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Most important publications in national or international peer-reviewed journals, books and conferences

AC: corresponding author. (nº x / nº y): position / total authors. If applicable, indicate the number of citations

1 **Scientific paper**. Mirones, O; Baño-Medina, J; (3/4) Brands, S; Bedia, J. 2025. Towards Spatio-temporally Consistent Multi-Site Fire Danger Downscaling with Explainable Deep Learning. J. Geophys. Res. Mach. Learn.accepted. https://doi.org/10.1029/2024JH000331

2 **Scientific paper**. Rush, WD; Lora, JM; Skinner, CB; et al; Quagraine, KT; (8/25) Brands, S. 2025. Atmospheric River Detection Under Changing Seasonality and Mean-State Climate: ARTMIP Tier 2 Paleoclimate Experiments. J. Geophys. Res. Atmos.130-e2024JD042222. https://doi.org/10.1029/2024JD042222

3 **Scientific paper**. Fernández-Granja, J; Bedia, J; Casanueva, A; Brands, S; (5/5) Fernández, J. 2024. The signature of the main modes of climatic variability as revealed by the Jenkinson-Collison classification over Europe. Int. J. Climatol.44-11, pp.4076-4088. https://doi.org/10.1002/joc.8569

4 **Scientific paper**. Graafland, CE; (2/3) Brands, S; Gutiérrez, JM. 2024. A data-driven probabilistic network approach to assess model similarity in CMIP ensembles. Artif. Intell. Earth Syst.AMS. 3, pp.e230073. https://doi.org/10.1175/AIES-D-23-0073.1

5 **Scientific paper**. (1/5) Brands, S (AC); Fernández-Granja, JA; Bedia, J; Casanueva, A; Fernández, J. 2023. A global climate model performance atlas for the Southern Hemisphere extratropics based on regional atmospheric circulation patterns. Geophys. Res. Lett.American Geophysical Union. 50, pp.e2023GL103531. https://doi.org/10.1029/2023GL103531

6 **Scientific paper**. Fernández-Granja, JA; (2/5) Brands, S; Bedia, J; Casanueva, A; Fernández, J. 2023. Exploring the limits of the Jenkinson–Collison weather types classification scheme: a global assessment based on various reanalyses. Clim. Dyn.Springer. 61, pp.1829-1845. https://doi.org/10.1007/s00382-022-06658-7

7 **Scientific paper**. (1/1) Brands, S (AC). 2022. Common error patterns in the regional atmospheric circulation simulated by the CMIP multi-model ensemble. Geophys. Res. Lett.American Geophysical Union. 49, pp.e2022GL101446. https://doi.org/10.1029/2022GL101446

8 **Scientific paper**. (1/1) Brands, S (AC). 2022. A circulation-based performance atlas of the CMIP5 and 6 models for regional climate studies in the Northern Hemisphere mid-to-high latitudes. Geosci. Model Dev.European Geosciences Union. 15, pp.1375-1411. https://doi.org/10.5194/gmd-15-1375-2022

9 **Scientific paper**. (1/13) Brands, S (AC); Fernández-García, G; García-Vivanco, M; et al; Taboada, J. 2020. An exploratory performance assessment of the CHIMERE model (version 2017r4) for the northwestern Iberian Peninsula and the summer season. Geosci. Model Dev.European Geosciences Union. 13, pp.3947-3973. https://doi.org/10.5194/gmd-13-3947-2020

10 **Scientific paper**. O'Brien, TA; Payne, AE; Shields, CA; et al; Zhou, Y; (5/30) Brands, S. 2020. Detection Uncertainty Matters for Understanding Atmospheric Rivers. Bull. Amer. Meteorol. Soc.American Meteorological Society. 101, pp.E790-E796. https://doi.org/10.1175/BAMS-D-19-0348.1

11 **Scientific paper**. Rutz, JJ; Shields, CA; Lora, JM; et al; Viale, M; (11/37) Brands, S. 2019. The atmospheric river tracking method intercomparison project (ARTMIP): quantifying uncertainties in atmospheric river climatology. J. Geophys. Res. Atmos.American Geophysical Union. 124, pp.13777-13802. https://doi.org/10.1029/2019JD030936

12 **Scientific paper**. Soares, PMM; Maraun, D; (3/13) Brands, S; et al; Obermann-Hellhund, A. 2019. Process-based evaluation of the VALUE perfect predictor experiment of statistical downscaling methods. Int. J. Climatol.Royal Meteorological Society. 39, pp.3868-3893. https://doi.org/10.1002/joc.5911

13 **Scientific paper**. Ummenhofer, CC; Seo, H; Kwon, Y-O; Parfitt, R; (5/6) Brands, S; Joyce, TM. 2017. Emerging European winter precipitation pattern linked to atmospheric circulation changes over the North Atlantic region in recent decades. Geophys. Res. Lett.American Geophysical Union. 44, pp.8557-8566. https://doi.org/10.1002/2017GL074188

14 **Scientific paper**. (1/1) Brands, S (AC). 2017. Which ENSO teleconnections are robust to internal atmospheric variability?. Geophys. Res. Lett.American Geophysical Union. 44, pp.1483-1493. https://doi.org/10.1002/2016GL071529

15 **Scientific paper**. Gutiérrez, JM; San-Martín, D; (3/5) Manzanas, R; Brands, S; Herrera, S. 2017. Reassessing Model Uncertainty for Regional Projections of Precipitation with an Ensemble of Statistical Downscaling Methods. J. Climate. American Meteorological Society. 30, pp.203-223. https://doi.org/10.1175/JCLI-D-16-0366.1

16 **Scientific paper**. (1/3) Brands, S (AC); Gutiérrez, JM; San-Martín, D. 2017. Twentieth-century atmospheric river activity along the west coasts of Europe and North America: algorithm formulation, reanalysis uncertainty and links to atmospheric circulation patterns. Clim. Dyn.Springer. 48, pp.2771-2795. https://doi.org/10.1007/s00382-016-3095-6

17 **Scientific paper**. Eiras-Barca, J; (2/3) Brands, S; Miguez-Macho, G. 2015. Seasonal variations in North Atlantic atmospheric river activity and associations with anomalous precipitation over the Iberian Atlantic Margin. J. Geophys. Res. Atmos.American Geophysical Union. 121, pp.931-948. https://doi.org/10.1002/2015JD023379

18 **Scientific paper**. Lorenzo, M; (2/3) Ramos, AM; Brands, S. 2015. Present and future climate conditions for winegrowing in Spain. Reg. Environ. Change. Springer. 16, pp.617-627. https://doi.org/10.1007/s10113-015-0883-1

19 **Scientific paper**. Bedia, J; Herrera, S; Gutiérrez, JM; Benali, A; (5/7) Brands, S; Mota, B; Moreno, JM. 2015. Global patterns in the sensitivity of burned area to fire-weather: Implications for climate change. Agric. For. Meteorol.214-215, pp.369-379. https://doi.org/10.1016/j.agrformet.2015.09.002

20 **Scientific paper**. Manzanas, R; (2/6) Brands, S; San-Martín, D; Lucero, A; Limbo, C; Gutiérrez, JM. 2015. Statistical Downscaling in the Tropics Can Be Sensitive to Reanalysis Choice: A Case Study for Precipitation in the Philippines. J. Climate. 28, pp.4171-4184. https://doi.org/10.1175/JCLI-D-14-00331.1

21 **Scientific paper**. (1/1) Brands, S (AC). 2014. Predicting average wintertime wind and wave conditions in the North Atlantic sector from Eurasian snow cover in October. Environ. Res. Lett.9, pp.045006. https://doi.org/10.1088/1748-9326/9/4/045006

22 **Scientific paper**. (1/3) Brands, S (AC); Herrera, S; Gutiérrez, JM. 2014. Is Eurasian snow cover in October a reliable statistical predictor for the wintertime climate on the Iberian Peninsula?. Int. J. Climatol.34, pp.1615-1627. https://doi.org/10.1002/joc.3788

23 **Scientific paper**. (1/1) Brands, S (AC). 2013. Seasonal Predictions of Boreal Winter Accumulated Heating Degree-Days and Relevance for the Weather Derivative Market. J. Appl. Meteorol. Climatol.52, pp.1297-1302. https://doi.org/10.1175/JAMC-D-12-0303.1

24 **Scientific paper**. (1/4) Brands, S (AC); Herrera, S; Fernández, J; Gutiérrez, JM. 2013. How well do CMIP5 Earth System Models simulate present climate conditions in Europe and Africa?. Clim. Dyn.41, pp.803-817. https://doi.org/10.1007/s00382-013-1742-8

25 **Scientific paper**. Gutiérrez, JM; San-Martín, D; (3/5) Brands, S (AC); Manzanas, R; Herrera, S. 2013. Reassessing Statistical Downscaling Techniques for Their Robust Application under Climate Change Conditions. J. Climate. 26, pp.171-188. https://doi.org/10.1175/JCLI-D-11-00687.1

26 **Scientific paper**. (1/4) Brands, S (AC); Gutiérrez, JM; Cofiño, AS; Herrera, S. 2012. Comments on "Global and Regional Comparison of Daily 2-m and 1000-hPa Maximum and Minimum Temperatures in Three Global Reanalyses". J. Climate. 255, pp.8004-8006. https://doi.org/10.1175/JCLI-D-12-00122.1

27 **Scientific paper**. (1/4) Brands, S (AC); Manzanas, R; Gutiérrez, JM; Cohen, J. 2012. Seasonal Predictability of Wintertime Precipitation in Europe Using the Snow Advance Index. J. Climate. 25, pp.4023-4028. https://doi.org/10.1175/JCLI-D-12-00083.1

28 **Scientific paper**. (1/4) Brands, S (AC); Herrera, S; Gutiérrez, JM; Cofiño, AS. 2012. On the Use of Reanalysis Data for Downscaling. J. Climate. 25, pp.2517-2526. https://doi.org/10.1175/JCLI-D-11-00251.1

29 **Scientific paper**. (1/5) Brands, S (AC); Taboada, JJ; Cofiño, AS; Sauter, T; Schneider, C. 2011. Statistical downscaling of daily temperatures in the NW Iberian Peninsula from global climate models: validation and future scenarios. Clim. Res.48, pp.163-176. https://doi.org/10.3354/cr00906

30 **Scientific paper**. (1/4) Brands, S (AC); Herrera, S; San-Martín, D; Gutiérrez, JM. 2011. Validation of the ENSEMBLES global climate models over southwestern Europe using probability density functions, from a downscaling perspective. Clim. Res.48, pp.145-161.

C.2. Conferences and meetings

Brands, S. An exhaustive global climate model performance assessment based on Lamb weather types. EMS Annual Meeting 2022. European Meteorological Society. 2022. Participatory - invited/keynote talk. Conference.

C.3. Research projects and contracts

1 **Project**. Regulation EU 2020/2094, CSIC's Interdisciplinary Thematic Platform Clima (PTI-Clima). PTI Clima. (Instituto de Física de Cantabria). 01/01/2023-30/06/2026. 6.200.000 €. Co-ordinator.

2 **Project**. COST-ES1102, VALUE: COST Action ES1102. CENTRO DE ACUSTICA APLICADA Y EVALUACION NO DESTRUCTIVA; Acción COST del VII Programa Marco de la UE. Douglas Maraun. (Instituto de Física de Cantabria). 01/11/2012-31/12/2016. 2.000.000 €. Team member.

3 **Project**. QWeCI: Quantifying Weather and Climate Impacts on Health in Developing Countries, FP7-ENV-2009-1-243964. Small-Medium Scale Focused Project del VII Programa Marco de la UE. Andy Morse. (Instituto de Física de Cantabria). 01/02/2010-30/06/2013. 2.000.000 €. Team member.

4 **Project**. 200800050084078, ESTCENA. José Manuel Gutiérrez. (Universidad de Cantabria). 01/01/2009-31/12/2011. 801.009 €. Team member.