



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 21/10/2022

First name	Maria Antonia		
Family name	Jiménez Cortés		
Gender (*)	Female	Birth date (dd/mm/yyyy)	09/12/1976
Social Security, Passport, ID number	18224739E		
e-mail	mantonja.jimenez@uib.cat	URL Web	https://www.uib.cat/personal/ABTE3NTcx/
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-8411-5512		

(*) Mandatory

A.1. Current position

Position	Senior Lecturer & vice-dean Faculty of Science		
Initial date	01/10/2020		
Institution	Universitat de les Illes Balears (UIB)		
Department/Center	Physics	Science Faculty	
Country	Spain	Teleph. number	971173280
Key words	Atmospheric Boundary Layer, Surface Heterogeneities, Modelling		

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

Period	Position/Institution/Country/Interruption cause
12/09/2016 – 30/09/2020	Tenure-track contract Lecturer with a PhD, UIB, Spain
25/09/2015 – 11/09/2016	Assistant lecturer, UIB, Spain
01/09/2012 – 31/08/2015	Postdoc contract JAEdoc, IMEDEA (UIB-CSIC), Spain
01/10/2007 – 31/07/2012	Postdoc contracts (research projects), UIB, Spain Visiting scientist at Delft Technical University, The Netherlands
01/11/2005 – 30/09/2007	Assistant lecturer, UIB, Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Physics	Universitat de les Illes Balears / Spain	2005
Graduate in Physics	Universitat de les Illes Balears / Spain	1999

Part B. CV SUMMARY

My research contributions during the last 10 years have been focused in improving the scientific knowledge of the thermally-driven winds in complex terrain regions. Particularly, I have explored the importance of the surface features and the interaction between surface and atmosphere. Most of the studies that I have performed are based on observations from experimental field campaigns and the methodologies used combine the inspection of data and model outputs. I have contributed in the increased of knowledge of the physical mechanisms responsible of the formation of an exit valley jet (how downslope winds

converge in the bottom parts of the basin to generate the jet and how it travels towards the foothills and plain), the coastal sea/land-breeze (characterization of the spatial and temporal scales involved in the initiation, development and decaying of the breeze and the role of the horizontal and vertical thermal gradients and the larger-scale winds) or the cold-air pool (how the locally-generated winds contribute in its formation and the role of the surface features). It is important to mention that the numerical simulations have been deeply explored and these analyses have contributed in understanding the model limits (under which conditions model results are realistic and when parameterizations are out of the ranges of applicability).

Regarding mesoscale modelling, I have incorporated the use of satellite-derived products (land-surface temperature) to validate model outputs, beyond the classical approach that uses data from surface weather stations. For the data analysis, I have contributed in developing methodologies to perform filters to the observations (usually from a network of surface weather observations) to select the days when an atmospheric process is present (for instance, sea-breeze or cold pool events) to further study it.

It is important to highlight my collaborations with interdisciplinary teams. I have developed a method to compute the number of chilling hours (very important in agriculture), estimate the influence of the sea-spray and large-scale circulations in the transport of microorganisms over the oceans or the effect of the wind and waves in the mass budget of the posidonia beach wrack (I have leaded this last collaboration).

All these research works have been in the framework of research projects (most of them funded by the Spanish Government through the research plans) where I have been involved as member of the research team and leading the modelling objectives and tasks (for the last two projects as co-PI and IP). Also, I am involved in international initiatives/groups focused on modelling and in complex terrain (for instance, GALBS, DICE, BLLAST, LIAISE). Particularly, I am currently leading the mesoscale works in the LIAISE project and the 1st action has been to perform a mesoscale modelling intercomparison. All of these activities and projects have allowed me to collaborate with researchers from universities and research institutes in Europe (for instance, MeteoFrance, UK Metoffice, Delft University of Technology, Wageningen University, Bergen University, Zagreb University, University of Lisbon, CNR-ISAC or ECMWF).

My research activities also have contributed in the formation of future researchers. Particularly, I am currently directing a PhD thesis and I have co-directed another one. I have also experience in supervising master and bachelor students (10 during the last 10 years). Besides, the topics studied during the master/bachelor have allowed the students to find a job (some of them continue doing research but others work in public/private companies).

I have disseminated my research basically through articles published in specific journals (most of them in Q1). My index h is 18 (WoS) and my works have a total of 1303 cites. I have also participated in international conferences (for instance, EGU, EMS, BLT, Metmed). Regarding modelling, I have participated in mostly all the MesoNH meetings to exchange experiences and I have a close collaboration with researchers from MeteoFrance. Besides, I have explained my research to local stakeholders (participating in local meetings) and to the rest of the community (schools, societies, consortiums, etc), particularly with public and private institutions to transfer all the knowledge to the society. For instance, my studies about the chilling hours and local winds in Mallorca are used by the Balearic Government (forecast the most productive crops and evaluate the wind source to enhance the renewable production of energy) but also by other associations/partners (agriculture, industry, tourism,

etc). Also, the annual/seasonal cycles of the *Posidonia oceanica* beach wrack are taken into account when it is removed from some beaches during the touristic season.

Finally, I would like to highlight that I have been nominated several times as member of thesis committees, reviewer of high-rated journals and involved in the organization of international conferences (chair of Metmed and co-chair of session AS2.1 of the EGU).

Part C. RELEVANT MERITS

C.1. Publications

Seguí, **Jiménez**, Cursach (2021) Local conditions effects on seed germination of *Hypericum balearicum* L. in response to temperature, *Flora*, 282, 151896.

Grau, **Jiménez**, Cuxart (2021) Statistical characterization of the sea-breeze physical mechanisms through in-situ and satellite observations, *International Journal of Climatology*, 41:17-30.

Jiménez, Grau, Cuxart (2020) Generation of chilling hours maps using surface observations and satellite data, *Atmospheric Research*, 236, 104807.

Jiménez, Cuxart, Martínez-Villagrasa (2019) Influence of a valley exit jet on the nocturnal atmospheric boundary layer at the foothills of the Pyrenees, *Quarterly Journal of the Royal Meteorological Society*, 145:356-375.

Simó, Martínez-Villagrasa, **Jiménez**, Caselles, Cuxart (2018) Impact of the Surface-Atmosphere Variables on the relation between Air and Land Surface Temperatures. *Pure and Applied Geophysics*, 175:3939-3953.

Conangla, Cuxart, **Jiménez**, Martínez-Villagrasa, Miró, Tabarelli, Zardi (2018) Cold-air pool evolution in a wide Pyrenean valley. *International Journal of Climatology*, 38:2852-2865.

Mayol, Arrieta, **Jiménez**, Martínez-Asensio, Garcias-Bonet, Dachs, González-Gaya, Royer, Benítez-Barrios, Fraile-Nuez, Duarte (2017) Long-range transport of airborne microbes over the global tropical and subtropical ocean. *Nature Communications*, 8:201.

Jiménez, Beltran, Traveset, Calleja, Delgado-Huertas, Marbà (2017) Aeolian transport of seagrass (*Posidonia oceanica*) beach-cast to terrestrial systems. *Estuarine, Coastal and Shelf Science*, 196:31-44.

Jiménez, Simó, Wrenger, Guijarro, Telisman-Prtenjak, Cuxart (2016) Morning transition case between the land and the sea breeze regimes, *Atmospheric Research*, 172:95-108.

Cuxart, **Jiménez**, Telisman-Prtenjak, Grisogono (2014) Study of a sea breeze case through momentum, temperature and turbulence budgets. *Journal of Applied Meteorology and Climatology*, 53:2589-2609.

C.2. Congress

Jiménez; Cuxart; Grau; Boone; Donier; Le Moigne; Miró; More; Tiesi; Malguzi; Brooke; Best (oral presentation) Land surface Interactions with the Atmosphere over the Iberian Semi-arid Environment (LIAISE): 1st modelling intercomparison, 8th International Conference on Meteorology and Climatology of the Mediterranean (MetMed, 25-27 May 2021, online)

Jiménez (oral presentation) Estimating the air temperature from remote sensing surface temperature observations, Joint EUSTACE and 5th GlobTemperature User Workshop (27-29 November 2017, Lisbon, Portugal)

Jimenez, Lock, Best (invited oral presentation) Initial results from the Diurnal land/atmosphere coupling experiment (DICE), European Geosciences Union General Assembly (EGU, 27 April – 2 May 2014, Wien, Austria)

C.3. Research projects

*** Computational resources at ECMWF supercomputer (as a IP or researcher):**

The role of basin topography and surface heterogeneities in the organization of the flow at low levels. IP: **MA Jiménez** and J Cuxart, 2021-2023.

Effect of surface heterogeneities and evapotranspiration changes on the atmospheric boundary-layer. IP: **MA Jiménez** and J Cuxart, 2018-2020.

Effect of the surface heterogeneities in the atmospheric boundary-layer. IP: **MA Jiménez** and J. Cuxart, 2015-2017.

Atmospheric Boundary Layer processes in complex terrain. IP: J Cuxart, 2012-2014.

Study of the stably stratified atmospheric boundary layer through Large-Eddy Simulations and high-resolution mesoscale simulations. IP: J Cuxart, 2002-2012.

*** Projects funded through the National Plan for I+D+I (as a IP or researcher):**

WET-ARID: Wind and EvapoTranspiration in semiARid and IrrigateD complex terrain (IP: **M.A. Jiménez**) PID2021-124006OB-I00, 2022-2025.

WISE: Water cycle of an Irrigated area and its Surroundings in the Eastern Ebro subbasin (IP: **M.A. Jiménez** and J. Cuxart) RTI2018-098693-B-C31, 2019-2021.

ATMOUNT: Analyzing ATmosphere-surface interactions in MOUNTain areas for improved understanding of global change impacts (IP: J.Cuxart) CGL2015-65627-C3-1-R, 2016-2018.

PROCLAM: surface thermal inversions and low level jets: experimental and numerical study (IP: J. Cuxart) CGL2009-12797-C03-01, 2009-2012.

*** Other (competitive) projects:**

Avaluació del potencial eòlic dels vents generats localment a Mallorca: l'embat, el terral i els vents de pendent (IP: **M.A. Jiménez**) PRD2018/67, 2020-2023.

*** Participation in the COST actions:**

ES-0802: Unmanned Aerial Systems in Atmospheric Research, 2008-2013, UE

ES-0905: Basic concepts for convection parameterization in weather forecasts and climate models, 2009-2014, UE

C.4. Contracts, technological or transfer merits

* **Conselleria d'agricultura (Balearic Government)** to build a chilling-hours map over Mallorca, 2018 (IP: MA Jiménez)

* Farmers association **APAEMA** to compute the number of chilling hours in some regions devoted to agriculture in Mallorca (IP: MA Jiménez)

* Suport to contract a graduate student (18-30 years old) through European Funds (*programa de jóvenes calificados*) 15 months-contract (IP: MA Jiménez)