MINISTERIO DE CIENCIA E INNOVACIÓN

CURRICULUM VITAE (maximum 4 pages)

AGENCIA ESTATAL DE INVESTIGACIÓN

CV date	04/05/2022

Part A. PERSONAL INFORMATION

First and Family name	Cesar Azorin-Molina		
ID number	73997301E	Age	41
Researcher codes	WoS Researcher ID	A-9510-2012	
	SCOPUS Author ID	15821692100	
	ORCID	0000-0001-5913-7026	

A.1. Current position

Institution	*Consejo Superior de Investigaciones Científicas (CSIC)*			
Department	*Centro de Investigaciones sobre Desertificación (CIDE) / Dpto. Ecología*			
Address and Country	Ctra. Moncada-Náquera km 4,5, 46113 Moncada (Valencia, Spain)			
Phone number	635966401	E-mail	cesar.azorin@csic.es	
Current position	Científico Titular		From	16/11/2021
Key words	Climatology; Atmospheric Sciences; wind speed; wind gusts; wind extremes; "stilling" *vs.* "reversal"; climate variability; climate change			

A.2. Education

Degree	University	Year
Bachelor of Geography	University of Alicante	2002
DEA degree	University of Alicante	2004
Master in Applied Climatology	University of Barcelona	2005
European PhD in Geography	University of Alicante	2008

A.3. JCR articles, h Index, thesis supervised…

Doctoral thesis supervised: 3 defended (1 Sweden, 1 China and 1 Spain) + 3 in progress
Master thesis supervised: 5 defended (2 in Sweden) + 2 in progress
Publications in SCI journals: 114 (29 as first author; including *Nat. Clim. Chang.*, *PNAS*, etc.)
Total citations: Web of Science 5040, Scopus 5376, Google Scholar 7203, RGate 7004
Average citations per item: 42.99
Total publications in the first quartile (Q1): 92
H-index: Web of Science 36, Scopus 37, Google Scholar 40 i10-index 89, ResearchGate Score 40.52
Publications in journals not included in JCR, SCI and SSCI: 8
Books as editor and scientific monographs: 9
Chapters in collective volumes: 43
Scientific conferences: 146 (116 international) + EGU convener
Participation in research projects: 30 (12 European + 17 National + 1 Regional)
PI in research projects: 1 EC MSCA (€ 186K), 1 Swedish Research Council (€ 355K), 1 Swedish FORMAS (€ 278K), 1 Spanish Ministry of S&I (€ 108K), 1 CSIC (€ 30K), 1 FBBVA (€ 40K), 1 Next Generation EU (€ 175K)
Contracts with companies and / or administrations: 5

Part B. CV SUMMARY

Cesar Azorin-Molina is a Tenured Scientist -*Científico Titular*- since 2021 at the CSIC-CIDE (Valencia), where he leads the Climatoc-Lab. His scientific aim is to assess and attribute climate change and variability with focus on surface winds and extremes, and its implications on a wide socioeconomic (e.g., wind energy) and environmental (e.g., evapotranspiration-desertification) issues. He has published 110+ peer-reviewed articles in the fields of Meteorology and Atmospheric Sciences, with a h-index of 40. He coordinates the State of the Climate – Surface winds section of the BAMS; and actively participate in the ISTI-POST of the WMO, the Copernicus (C3S) Data Rescue Service, and the CORDEX-WCRP project on validating high-resolution modeling in Himalayas. He coordinated a EC H2020 MSCA-IF, and is currently PI of five research projects funded by the Swedish Research Council, the Spanish Ministry of Science and Innovation, the Swedish Research Council FORMAS, the Spanish CSIC, the FBVAA and the NextGenerationEU. He is associated Editor of the *PLOS ONE*, *Atmosphere*, and *Adv. Clim. Chang. Res*, and reviewer for the Spanish ANEP and DEVA, Swiss National Science Foundation, and the OSPA EGU / AGU. He is also an active member of the Regional Climate Group-University of Gothenburg, and the CSIC Platform on Climate and Climate Services. Azorin-Molina has been awarded with 5 prizes; granted with 6 fellowships (FPU, Torres Quevedo, JAE-Doc, JdC, MSCA IF, and RyC); scientists in 6 centres in Spain and 4 institutions in Sweden, USA, the Netherlands and Australia. He has solid skills on environmental instrumentation and the development of weather station networks.

Part C. RELEVANT MERITS

C.1. SCI Publications *Only related to wind studies and last years*

AZORIN-MOLINA, C., *et al.* 2021: [Global climate; Atmospheric circulation] Land and ocean surface winds [in "State of the Climate in 2019"]. ***Bull. Am. Meteorol. Soc.*** 102(8), S73-S77.

DENG, K., **AZORIN-MOLINA, C.**, MINOLA, L., ZHANG, G., CHEN, D., 2020: Global near-surface wind speed changes over the last decades revealed by reanalyses and CMIP6 model simulations. ***J. Clim.*** 34(6), 2219-2234.

AZORIN-MOLINA, C., *et al.* 2020: A decline of observed daily peak wind gusts with distinct seasonality in Australia, 1941-2016. ***J. Clim.*** 34(8), 3103–3127.

ZHANG, G., **AZORIN-MOLINA, C.**, CHEN, D., GUIJARRO, J.A., KONG, F., MINOLA, L., McVICAR, T.R., SON, S.-W., SHI, P., 2020: Variability of daily maximum wind speed across China, 1975-2016: An examination of likely causes. ***J. Clim.*** 33(7), 2793-2816.

SAFAEI PIROOZ, A.A., FLAY, R.G.J., MINOLA, L., **AZORIN-MOLINA, C.**, CHEN, D., 2020: Effects of sensor response and moving average filter duration on maximum wind gust measurements. ***J. Wind. Eng. Ind. Aerodyn.*** 206, 104354.

MINOLA, L., ZHANG, F., **AZORIN-MOLINA, C.,** PIROOZ SAFAEI, A.A., FLAY, R.G.J., HERSBACH, H., CHEN, D., 2020: Near-surface mean and gust wind speeds in ERA5 across Sweden: towards an improved gust parametrization. ***Clim. Dyn.*** 55, 887-907.

AZORIN-MOLINA, C., *et al.* 2020: [Global climate; Atmospheric circulation] Land and ocean surface winds [in "State of the Climate in 2019"]. ***Bull. Am. Meteorol. Soc.*** 101(8), S63-S65.

ZHANG, G., **AZORIN-MOLINA, C.,** SHI, P., LIN, D., GUIJARRO, J.A., KONG, F., CHEN, D., 2019: Impact of near-surface wind speed variability on wind erosion in the east agro-pastoral transitional zone of Northern China, 1982-2016. ***Agric. For. Meteorol.*** 271, 102-115.

ZENG, Z., ZIEGLER, A.D., SEARCHINGER, T., YANG, L., CHEN, A., JU, K., PIAO, S., LI, L.Z.X., CIAIS, P., CHEN, D., LIU, J., **AZORIN-MOLINA, C.**, CHAPPELL, A., MEDVIGY, D., WOOD, E.F., 2019: A reversal in global terrestrial stilling and its implications for wind energy production. ***Nat. Clim. Chang.*** 9, 979-985.

WOOLWAY R.I., MERCHANT, C.J., VAN DEN HOEK, J., **AZORIN-MOLINA, C.**, NOGES, P., LAAS, A., MACKAY, E.B., JONES, I.D. 2019: Northern Hemisphere atmospheric stilling accelerates lake thermal responses to a warming world. ***Geophys. Res. Lett.*** 46(21), 11983-11992.

SHI, P., ZHANG, G., KONG, F., CHEN, D., **AZORIN-MOLINA, C.,** GUIJARRO, J.A., 2019: Variability of winter haze over the Beijing-Tianjin-Hebei region tied to wind speed in the lower troposphere and particulate sources. ***Atmos. Res.*** 215, 1-11

AZORIN-MOLINA, C., *et al.* 2019: [Global climate; Atmospheric circulation] Surface winds [in "State of the Climate in 2018"]. ***Bull. Am. Meteorol. Soc.*** 100(9), S43-S45.

AZORIN-MOLINA, C., *et al.* 2019: An approach to homogenize daily peak wind gusts: an application to the Australian series. ***Int. J. Climatol.*** 39(4), 2260-2277.

AZORIN-MOLINA, C., *et al.* 2018: [Global climate; Atmospheric circulation] Surface winds [in "State of the Climate in 2017"]. ***Bull. Am. Meteorol. Soc.*** 99(8), S41-S43.

AZORIN-MOLINA, C., *et al.* 2018: Recent trends in wind speed across Saudi Arabia, 1978-2013: a break in the stilling. ***Int. J. Climatol.*** 38(S1), e966-e984.

AZORIN-MOLINA, C., *et al.* 2018: Evaluating anemometer drift: A statistical approach to correct biases in wind speed measurement. ***Atmos. Res.*** 203, 175-188.

AZORIN-MOLINA, C., *et al.* 2017: Wind speed variability over the Canary Islands, 1948-2014: focusing on trend differences at the land-ocean interface and below-above the trade-wind inversion layer. ***Clim. Dyn.*** 50(11-12), 4061-4081.

AZORIN-MOLINA, C., *et al.* 2017: [Global climate; Atmospheric circulation] Surface winds [in "State of the Climate in 2016"]. ***Bull. Am. Meteorol. Soc.*** 98(8), S37-S39.

AZORIN-MOLINA, C., *et al.* 2017: Assessing the impact of measurement time interval when calculating wind speed means and trends under... ***Int. J. Climatol.*** 37(1), 480-492.

MINOLA, L., **AZORIN-MOLINA, C.**, CHEN, D., 2016: Homogenization and assessment of observed near-surface wind speed trends across Sweden, 1956-2013. ***J. Clim.*** 29 (20), 7397-7415.

DUNN, R.J.H., **AZORIN-MOLINA, C.**, MEARS, C.A., BERRISFORD, P., McVICAR, T.R., 2016: [Global climate; Atmospheric circulation] Surface winds [in "State of the Climate in 2015"]. ***Bull. Am. Meteorol. Soc.***, 97(8), S38-S40.

AZORIN-MOLINA, C., GUIJARRO-PASTOR, J.A., McVICAR, T.R., VICENTE-SERRANO, S.M., CHEN, D., JEREZ, S., ESPIRITO-SANTO, F., 2016: Trends of daily peak wind gusts in Spain and Portugal, 1961-2014. ***J. Geophys. Res. Atmos.*** 121 (3), 1059-1078.

C.2. Research projects (as Principal Investigator)

Stilling vs. reversal: proyecciones de la velocidad del viento en el siglo XXI y oscilaciones atmósfera-océano asociadas – WIND-21. Fundación BBVA. Beca Leonardo a Investigadores y Creadores Culturales. 2021-2022 (39.951€).

Red española e iberoamericana sobre variabilidad climática y servicios climáticos en ecosistemas terrestres y marinos – RED-CLIMA. CSIC. Project ID INCGLO0023. 2021-2023 (29.941€).

Assessing centennial wind speed variability from a historical weather data rescue project in Sweden - WINDGUST. SWEDISH FORMAS. Project ID 2019-00509. 2020-2022 (278.614,33€).

Evaluación y atribución de la variabilidad de la velocidad media y las rachas máximas de viento: causas del fenómeno "stilling" - IBER-STILLING. Ministerio de Ciencia e Innovación. RTI2018-095749-A-I00. 2019-2021. (108.900€).

Detection and attribution of changes in extreme wind gusts over land. SWEDISH RESEARCH COUNCIL. Project ID 2017-03780. 2018-2021 (348.915,90€).

Towards improved understanding of the worldwide decline of wind speed in a climate change scenario - STILLING. EUROPEAN COMMISSION – MSCA IF. Project ID: 703733. 2016-2018 (185.857,20€).

***Total: 992.179,43€; ~600.000€ in grants + 18.500€ in travel grants**

C.3. Participation in contracts

Diagnóstico de la contaminación atmosférica en Valencia. Valencia City Council . 2008-2009 (50.000€). PI: Enrique Mantilla (CEAM)

PREVIOZONO 2008 and 2009. GVA. 2008-2009 (90.000€/year) PI: Enrique Mantilla (CEAM)

Estudio y evaluación de la contaminación atmosférica por ozono troposférico en España. Ministry of Environment&Rural-Marine A. ES272004. 2005-2009 (988.894€). PI: Dr. Millan M. (CEAM)

C.4. Technological results

Design, installation and maintenance of automatic meteorological station networks for different Institutions: University of Alicante, CEAM, IPE-CSIC, and CIDE-CSIC. ***Total: >60 stations***

C.5. Member of international research networks

Member of the ISTI Parallel Observations Science Team (POST) of the WMO.

Member of the Surface wind speed's team of the "State of the Climate" – Bull. Amer. Meteor. Soc.

Member of the Copernicus Climate Change Service (C3S) Data Rescue Service.

Member of the *Plataforma Temática Interdisciplinar* (PTI)-Climate and Climate Services. CSIC.

C.6. Supervision of PhD, Master students, and postdoctorals grants & technicians

C6.1. PhD thesis (3 defended + 2 ongoing)

UTRABO-CARAZO, E.: Estudio y atribución de la variabilidad multidecadal del viento y sus extremos, con énfasis en la Península Ibérica. CIDE-CSIC, Valencia. Dr. Cesar Azorin-Molina and Dr. Enric Aguilar. Since October 2020. Ongoing.

BEDOYA VALESTT, S.: Cambios observados y simulados de los vientos locales y brisas marinas. Dr. Cesar Azorin-Molina. Since July 2020. Ongoing.

NAVARRO-SERRANO, F.M.: Análisis del comportamiento altitudinal de la temperatura del aire superficial en áreas de montaña. Instituto Pirenaico de Ecologia, Spanish National Research Council (IPE-CSIC), Zaragoza, Spain. Dr. Juan-I. Lopez-Moreno and Dr. Cesar Azorin-Molina. Defended 18 December 2020.

MINOLA, L.: Changes in near-surface winds across Sweden over the past decades – Observations and simulations. Earth Sciences Centre, Regional Climate Group, University of Gothenburg, Göteborg, Sweden. Dr. Cesar Azorin-Molina and Dr. Deliang Chen. Defended 11 December 2020.

ZHANG, G.: Wind speed variability and associated environment issues with a focus on northern China. Beijing Normal University, Beijing, China. Directed by Dr. Peijun Shi, Dr. Deliang Chen and Dr. Cesar Azorin-Molina. Defended 20 May 2020.

C6.2. Master thesis (5 defended)

LARA ZAMBRANO, J.: *Tendencias de la velocidad media del viento en Ecuador*. Department of Geography, University of Valencia, Valencia, Spain. Master thesis of Science. 13 January 2021. Maxima Cum Laude. Directed by Dr. Cesar Azorin-Molina and Dr. Maria Jose Estrela-Navarro.

BEDOYA VALESTT, S.: *Tendencias de la velocidad de la brisa marina en el este de la Península Ibérica, 1961-2019*. UPV, Valencia, Spain. Master thesis of Science. 25 September 2020. Maxima Cum Laude. Directed by Dr. Cesar Azorin-Molina and Dr. Victor Sánchez Morcillo.

UTRABO-CARAZO, E.: *Trends in the near-surface mean wind speed and gusts over the Iberian Peninsula and its connection with modes of climate variability in the Euro-Atlantic sector, 1961-2019*. Universidad Complutense de Madrid, Madrid, Spain. Master thesis of Science. 20 July 2020. Maxima Cum Laude. Directed by Dr. Cesar Azorin-Molina, Dr. Encarna Serrano Mendoza.

WESSELSCHMIDT, N.: *Near-surface wind speed trends from different reanalysis datasets*. Earth Sciences Centre, University of Gothenburg, Göteborg, Sweden. Master thesis of Science. 30 August 2017. Maxima Cum Laude. Directed by Dr. Cesar Azorin-Molina and Dr. Deliang Chen.

MINOLA, L.: *Homogenization, assessment and attribution of observed near-surface wind speed trends across Sweden, 1956-2013*. Earth Sciences Centre, Regional Climate Group, University of Gothenburg, Göteborg, Sweden. Master thesis of Science. 2 June 2015. Maxima Cum Laude. Directed by Dr. Cesar Azorin-Molina and Dr. Deliang Chen.

C.6.3. Supervision of postdoctoral grants & technicians

ZHANG, G.: *Assessing the role of historical changing winds and surface roughness globally*. Beijing Normal University (China). 01/06/2020-Ongoing. Postdoctoral.

DENG, K.: *Detection and attribution of changes in extreme wind gusts over land*. RCG, Gothenburg (Sweden). 01/09/2019-Ongoing. Postdoctoral.

C.7. R&D management and climate services

- Referee of 9 doctoral thesis.
- Referee of the ANEP, Earth Sciences. Since April 2010
- Referee of the ANEP, Social Sciences. Since October 2015.
- Referee of the DEVA, Earth Sciences. Since August 2020.
- Referee of the Swiss National Science Foundation. Since December 2020.
- Referee >80 papers for 29 SCI Journals; "Outstanding reviewer" for *Elsevier*.
- Referee for OSPA at the *American Geophysical Union´s y European Geophysical Union´ meetings*.
- Committee member of 3 postdoc recruitments at the University of Gothenburg (Sweden).
- Official weather observer Id. 8007E (Villena, Alicante) of AEMET. Since 2006.
- Weather forecaster in the Volvo Ocean Race 2011/2012, and "The Tall Ships Races 2007".
- Editor. board of *Rev. de Climatol.*, *PLOS One*, *Atmosphere*, *Adv. Meteorol.*, *Adv. Clim. Chang. Res.*
- Member of 5 societies: AEC, AGE, EGU, AGU, and AVAMET; and 7 research groups.
- Development of wind climate databases; NOAA-AVHRR 1-km Iberian Peninsula; etc..

C.8. Other merits: convenership, invited talks, teaching, international field campaigns

- Convener EGU *Climate Data Homogenization and Analysis of Climate Variability,…"*. Since 2017.
- 15 invited talks (solicited at EMS2017 Dublin / and C3S and ACRE 2017, Auckland) 2017.
- Invited assistant professor, Wageningen University (The Netherlands), WRM-33306. 2015.
- Part-time assistance professor, University of Alicante / Valencia, 223 hours. 2002-2014.
- Organizer at IIJMCMO. CGL2009-07949-E, Valencia. 11/03/2010-12/03/2010.
- Invited assistant professor, *3º Curso de Verano de la AEC*. Zaragoza. 4 hours. 2009.
- Experimental field campaigns in Cordillera Blanca (Perú) and Tibet-Himalayas (China)
- Research stays, >4-years: GU (Sweden), CIRA (USA), KNMI (The Netherlands), CSIRO (Australia)

C.9. Science dissemination and communication

- Scientific interviews on TV (TVE, Antena 3, Canal 9, etc.), Radio (RNE, Cadena Ser, Onda Cero, Cope, Radio 9, etc.), and Newspapers (Horizon, Cosmos, El Pais, El Mundo, ABC, Diario Información, La Verdad. Las Provincias, Levante, etc.)
- Workshops at Primary and Secondary schools.