CV Date	30/01/2024

Part A. PERSONAL INFORMATION

First Name	Alba		
Family Name	Badia Moragas		
Sex	Not Specified	Date of Birth	
ID number Social Security, Passport			
URL Web	https://urbag.eu/team-member/alba-badia-moragas/		
Email Address			
Open Researcher and Contributor ID (ORCID)	0000-0003-0906-8258		

A.1. Current position

Job Title	Postdoctoral position		
Starting date	2019		
Institution	Instituto de Ciencia y Tecnología Ambientales		
Department / Centre			
Country		Phone Number	
Keywords	Atmospheric and environmental chemistry; Atmospheric composition; Numerical simulation; Ozone; Greenhouse gas; Atmospheric pollution; Atmosphere		

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

Period	Job Title / Name of Employer / Country
2021 - 2021	Maternity leave / Instituto de Ciencia y Tecnología Ambientales
2017 - 2019	Postdoctoral position / Instituto de Química Física Rocasolano-Consejo Superior de Investigaciones Científicas, Spain
2018 - 2018	Maternity leave / Instituto de Química Física Rocasolano-Consejo Superior de Investigaciones Científicas, Spain
2014 - 2017	Senior Research Associate- Postdoctoral Position / School of Environmental Sciences- University of East Anglia, United Kingdom

Part B. CV SUMMARY

I conduct my research in the field of atmospheric chemistry modelling, contributing to the development and evaluation of several chemical transport models from climate to regional scales. Since my appointment at the Institute of Environmental Science and Technology (ICTA-UAB), I have applied my chemical modelling expertise at the urban level to understand the influence of nature-based solutions on the urban atmosphere in terms of chemistry (air quality) and physics (thermal regulation). I obtained my bachelor's degree in Mathematics from the Universitat Autonoma de Barcelona (UAB) (2008) and a MSc in Applied Mathematical Sciences with Climate Change Impacts Modeling from the Heriot-Watt University Edinburgh (2009). I hold a PhD in Environmental Engineering from the Barcelona Supercomputing Center (BSC)-Universitat Politècnica de Catalunya (UPC) and I had the opportunity to visit the Danish Meteorological Institute-Niels Bohr Institutet for the period of 3 months; during my PhD, I wrote a dissertation entitled Implementation, Development and Evaluation of the Gas-phase Chemistry within the Global/Regional NMMB/BSC Chemical Transport Model (NMMB/BSC-CTM) (2009-2014). My PhD studies were funded by the FPI-UPC grant. Before my current postdoctoral position, I previously worked as a postdoctoral fellow at the University of East Anglia (UEA, UK) for 3 years in collaboration with the University of Colorado that I visited for a period of 2 months, and the Consejo Superior de Investigaciones Científicas (CSIC) for two years. Therefore, I am a mathematician that has trained in atmospheric science for more than

12 years, working at different scientific institutions both in Spain and abroad, an experience that has provided me with an extensive scientific network.

To disseminate my research, I have published 22 papers in peer-reviewed journals, 6 of which were as first author and 4 of which were as the second author, 100% of which are in Q1 ranking in the field of atmospheric modelling computing an H-index of 14 with a total of 694 (Scopus) and 920 (Google Scholar) citations. I have submitted 37 contributions to national and international scientific conferences, and have been invited to give lectures at 6 different universities internationally (e.g., the University of Copenhagen, University of Colorado, University of Heidelberg, among others). To highlight the most important milestones in my career to date: 1) I participated in the AQMEII-Phase 2 initiative, in which I led the contribution from my group, 2) I developed code for the Global/Regional NMMB/BSC-CTM and the Community Atmosphere Model with Chemistry (CAM-chem) and I am currently developing code for the Weather Research and Forecast (WRF) model community, 3) I am working with other international research groups under the coordination of the World Meteorological Organization (WMO), to study the impacts of COVID-19 measures on air quality, and under the International Global Atmospheric Chemistry (IGAC) to provide a Tropospheric Ozone Assessment Report (TOAR) with an up-to-date scientific assessment of tropospheric ozone's global distribution and trends, 4) I was the principal investigator (PI) of the European project Blue, Green: Adapting Schools to Climate Change (Reference: UIA03-264-GBG_AS2C, €4 million total, €230,000 UAB) and I am currently involved in the national Project leading the atmospheric modelling with a postdoc under my supervision: Towards a net-zero climate-resilient Ebre Delta (Reference: 2023CLIMA00043 , 330,750 € total, 45,000 € ICTA) , 5) I have been successful in securing computational resources from the Red Española de Supercomputación (RES) to carry out the simulations I develop at ICTA-UAB, 6) I have supervised 1 PhD and several MSc students and I am currently supervising 3 PhD students, 7) I have been in several final year MSc and PhD panels, and 8) since last year, I am collaborating with the Mathematics department to teach mathematics or statistics at the UAB.

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**. Badia, A.; Vidal, V.; Ventura, S.; Curcoll, R.; Segura, R.; Villalba, G.2023. Modelling the impacts of emission changes on O$_3$ sensitivity, atmospheric oxidation capacity, and pollution transport over the Catalonia region. Atmospheric Chemistry and Physics. 23-18, pp.10751-10774.

2 **Scientific paper**. Segura, Ricard; Scott Krayenhoff, E.; Martilli, Alberto; Badia, Alba; Estruch, Carme; Ventura, Sergi; Villalba, Gara. 2022. How do street trees affect urban temperatures and radiation exchange? Observations and numerical evaluation in a highly compact city. Urban Climate. 46, pp.101288-101288. ISSN 2212-0955.

3 **Scientific paper**. Badia, Alba; Iglesias-Suarez, Fernando; Fernandez, Rafael P.; et al; Saiz-Lopez, Alfonso. 2021. The Role of Natural Halogens in Global Tropospheric Ozone Chemistry and Budget Under Different 21st Century Climate Scenarios. Journal of Geophysical Research: Atmospheres. American Geophysical Union ({AGU}). 126-20.

4 **Scientific paper**. Segura, Ricard; Badia, Alba; Ventura, Sergi; Gilabert, Joan; Martilli, Alberto; Villalba, Gara. 2021. Sensitivity study of PBL schemes and soil initialization using the WRF-BEP-BEM model over a Mediterranean coastal city. Urban Climate. Elsevier {BV}. 39, pp.100982-100982.

5 **Scientific paper**. Badia, Alba; Langemeyer, Johannes; Codina, Xavier; et al; Villalba, Gara. 2021. A take-home message from COVID-19 on urban air pollution reduction through mobility limitations and teleworking. npj Urban Sustainability. Springer Science and Business Media {LLC}. 1-1.

6 **Scientific paper**. Iglesias-Suarez, Fernando; Badia, Alba; Fernandez, Rafael P; et al; Saiz-Lopez, Alfonso. 2020. Natural halogens buffer tropospheric ozone in a changing climate. Nature Climate Change. ISSN 1758-6798.

7 **Scientific paper**. Li, Qinyi; Badia, Alba; Wang, Tao; et al; Saiz-Lopez, Alfonso. 2020. Potential Effect of Halogens on Atmospheric Oxidation and Air Quality in China. Journal of Geophysical Research: Atmospheres. 125-9, pp.e2019JD032058-e2019JD032058.

8 **Scientific paper**. Badia, A.; Reeves, C. E.; Baker, A. R.; et al; von Glasow, R.2019. Importance of reactive halogens in the tropical marine atmosphere: a regional modelling study using WRF-Chem. Atmospheric Chemistry and Physics. 19-5, pp.3161-3189.

9 **Scientific paper**. Badia, A.; Jorba, O.; Voulgarakis, A.; Dabdub, D.; P\'erez García-Pando, C.; Hilboll, A.; Gonçalves, M.; Janjic, Z.2017. Description and evaluation of the Multiscale Online Nonhydrostatic AtmospheReCHemistry model (NMMB-MONARCH) version 1.0: gas-phase chemistry at global scale. Geoscientific Model Development. 10-2, pp.609-638.

10 **Scientific paper**. Badia, A.; Jorba, O.2015. Gas-phase evaluation of the online NMMB/BSC-CTM model over Europe for 2010 in the framework of the AQMEII-Phase2 project. Atmospheric Environment. 115, pp.657-669. ISSN 1352-2310.

C.2. Conferences and meetings

1 Alba; Veronica; Sergi; Roger; Ricard; Gara. Response of the ozone chemistry to changes in emissions over the Catalonia region. EGU 2023. EGU. 2023. Austria.

2 Alba; Ricard; Sergi; Josep; Gara. How green infrastructures impact on urban air quality over Barcelona. 13th International Conference on Air Quality - Science and Application. University of Hertfordshire. 2022. Greece.

3 Alba Badia; Veronica Vidal; Macià Mut Sbert; Gara Villalba. Urban air pollution reduction during the COVID pandemia. ITM 2021 38th International Technical Meeting On Air Pollution Modelling And Its Application. 2021.

4 Dr; Dr Johannes Langemeyer; Nacho Guilera; Xavier Codina; Veronica Vidal; Ricard Segura; Joan Gilabert; Gara Villaba. Towards the New Normality: A Take-home Message from COVID-19 Mobility Limitations and Teleworking. AGU- Fall meeting 2020. 2020. United States of America.

5 Dr; Dr.; Carlos A. Cuevas; Rafael P. Fernandez; Douglas Kinnison; Prof.. How climate change affects tropospheric O3 budget?. EGU 2019. 2019. Austria.

6 Dr. Importance of reactive halogens in the tropical marine atmosphere using WRF-Chem. 20 Years Bromine Explosion: Atmospheric Chemistry in the Polar Troposphere. Universität Heidelberg. 2017. Germany.

7 Dr; Prof.; Prof.. Importance of reactive halogens in the tropical marine atmosphere. IGAC 2016. 2016. United States of America.

8 Dr; Prof.; Prof.. Interactions between volatile organic compounds and reactive halogen in the tropical marine atmosphere using WRF-Chem. EGU 2016. 2016. Austria.

9 Dr; Dr. Evaluation of gas-phase results of the online NMMB/BSC-CTM model at regional and global scales. 24th ACCENT/GLOREAM Workshop. 2012. Spain.

10 Dr; Dr. Intercomparison of the impact of stratospheric ozone handling on tropospheric composition using the global NMMB/BSC-CTM model in summer 2004,. EGU 2012. 2012. Austria.

C.3. Research projects and contracts

1 **Project**. Towards a net-zero climate-resilient Ebre Delta (2023CLIMA00043). Ariane Arias Ortiz. (Universitat Autònoma de Barcelona). 01/02/2024-01/02/2026. 330.750 €.

2 **Project**. URBAG: Integrated System Analysis of Urban Vegetation and Agriculture.. European Commission under the Horizon 2020-ERC. Gara Villalba. (Instituto de Ciencia y Tecnología Ambientales). 01/09/2019-01/09/2024. 1.893.754 €.

3 **Project**. Maria de Maeztu, 2020-2024. Ministerio de Economia y Competitividad (MINECO). (Instituto de Ciencia y Tecnología Ambientales). 01/01/2020-01/01/2024. 2.000.000 €.

4 **Project**. Pandèmies (2020 PANDE 00021) – Municipis resilients a les pandèmies mitjançant el nexe de l'agricultura de proximitat, energia, aigua i residus. Del pilot al municipi. AGAUR. Xavier Gabarrell Durany. (Instituto de Ciencia y Tecnología Ambientales). 14/05/2021-13/11/2022. 321.072 €.

5 **Project**. Climate dimension of natural halogens in the Earth system: Past, present, future (CLIMAHAL).. ERC (Consolidator Grant 2016). Alfonso Saiz-Lopez. (Instituto de Química Física Rocasolano). 01/09/2017-01/09/2022. 2.000.000 €.

6 **Project**. UIA03-264-GBG_AS2C Blue, Green & Grey_Adapting_Schools to Climate Change. Alba Badia Moragas. (Instituto de Ciencia y Tecnología Ambientales). 01/06/2021-31/08/2022. 107.000 €.

7 **Project**. AECT-2020-3-0003 Modelling the impacts of green infrastructure on air quality and climate change. Red Española de Supercomputación (RES). Alba Badia. (Instituto de Ciencia y Tecnología Ambientales). 01/11/2020-01/03/2020.

8 **Project**. Importance of marine gases and particles for tropospheric chemistry. NERC (Natural Environment Research Council). Roland von Glasow. (University of East Anglia). 15/10/2014-15/10/2017. 368.863 €.

9 **Project**. Severo-Ochoa. Gobierno de España. (Barcelona Supercomputing Center). 01/12/2011-01/12/2015.

10 **Project**. Acoplamiento online de un modulo completo de aerosoles multicomponente e al modelo atmosferico global regional NMMB. Ministerio de Economía y Competitividad. José Maria Baldasano. (Barcelona Supercomputing Center). 01/01/2011-31/12/2013. 83.000 €.

11 **Project**. Supercomputación y e-Ciencia. Ministerio de Economía y Competitividad. (Barcelona Supercomputing Center). 01/01/2007-31/12/2011. 5.000.000 €.