

Daniel Argüeso

Curriculum Vitae

Meteorology Group, Dpt. of Physics
University of Balearic Islands
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Employment

present

Marie Skłodowska-Curie Actions IF fellow

Meteorology Group, Department of Physics
University of Balearic Islands
Palma, Spain

Topics: Convective processes in the Maritime Continent, Air-land-sea interactions generating and modulating precipitation, simulating realistic precipitation in the tropics, convection-permitting regional climate modelling

03/2016–04/2017

Post-doctoral research fellow

Department of Atmospheric Sciences, SOEST
University of Hawai'i at Mānoa
Honolulu, HI, United States

Topics: Regional climate modelling and hindcast for wind power applications.

11/2011–03/2016

Post-doctoral research fellow

Climate Change Research Centre
University of New South Wales
Sydney, Australia

Topics: Ensemble of high-resolution climate change projections, interaction with impact researchers to generate useful climate projections, impact of cities and urban development on local climate (e.g heat stress), changes in mesoscale dynamics and extreme precipitation, changes and variability of heat waves, convection-permitting regional climate modelling.

5/2011–11/2011

Research Assistant

Applied Physics Department, Universidad de Granada
Granada, Spain

Topics: High-resolution climate change projections using dynamical downscaling, present and future characteristics of extreme events.

5/2007–5/2011

Research Assistant, PhD Student

Applied Physics Department, Universidad de Granada

Granada, Spain Topics: High-resolution climate change projections, impact of parameterizations on model performance, model evaluation, adaptation of model to climate applications, predictability of river flows, transport in the planetary boundary layer.

Education

Ph.D in Physics, Oct 2011, Universidad de Granada, Granada (Spain)

Thesis title: *High-resolution Projections of Climate Change over the Iberian Peninsula Using a Mesoscale Model*

M.S., Geophysics and Meteorology, Mar 2009, Universidad de Granada, Granada (Spain)

Thesis title: *An approximation to Mesoscale Model MM5: Application to Southern Iberian Peninsula*

B.S., Physics, Sep 2005, Universidad de Salamanca, Salamanca (Spain)

5-year undergraduate education with specialisation in Atmospheric Physics (2 years). First half of the undergraduate (3 years) completed in Universidad de Córdoba, Córdoba (Spain) and European international mobility program (1 year) completed in Università degli Studi di Modena e Reggio Emilia, Modena (Italy)

Funding and Awards

Marie Skłodowska-Curie Actions Individual Fellowship, 2017-2019, Universitat de les Illes Balears (Spain)

Simulating Realistic High-resolution precipitation in the Tropics (REHIPRE) - H2020-MSCA-IF-2016-743547

Partner institutions: Centre National de la Recherche Scientifique - CNRS (France), University of New South Wales (Australia)

Keywords: Maritime Continent, Convection-permitting models, Precipitation, Sea-breeze, Air-Sea-Land interactions

H2020 EU-funded fellowship

Australian Research Council Discovery Project 2018, 2018-2021, University of New South Wales (Australia)

A regional coupled climate model for Australia - DP180101251

Partner institutions: Universitat de les Illes Balears (Spain), Université Grenoble Alpes (France)

Keywords: Ocean-Atmosphere Coupled Model, Regional Climate Model, Australia, Maritime Continent, Climate Extremes, Air-Sea-Land interactions

Australian Research Council Discovery Project

Publications

Journal papers (30)

- [1] **D. Argüeso** and S. Businger. Wind power characteristics of Oahu, Hawaii. *Renewable Energy*, 128:324–336, 2018.
- [2] F. Ji, J.P. Evans, A. Di Luca, N. Jiang, R. Olson, **D. Argüeso**, L. T-C Chang, Y. Scorgie, and M. Riley. Projected change in characteristics of near surface temperature inversions for Southeast Australia. *Climate Dynamics*, 2018. Accepted April 2018.
- [3] Y. Li, N. Jourdain, A.S. Taschetto, A. Sen Gupta, **D. Argüeso**, S. Masson, and W. Cai. Resolution dependence of the precipitation and diurnal cycle over the Maritime Continent. *Climate Dynamics*, 48(11-12):4009–4028, 2017.

- [4] L. Fita, J.P. Evans, **D. Argüeso**, Y. Liu, and A. King. Evaluation of the regional climate response in Australia to large-scale climate modes in the historical NARCLiM simulations. *Climate Dynamics*, 49(7-8):2815–2829, 2017.
- [5] J.P. Evans, **D. Argüeso**, R. Olson, and A. Di Luca. Bias-corrected regional climate projections of extreme rainfall in south-east Australia. *Theoretical and Applied Climatology*, 130(3-4):1085–1098, 2017.
- [6] **D. Argüeso**, A. Di Luca, S.E. Perkins-Kirkpatrick, and J.P. Evans. Seasonal mean temperatures changes control future heat waves. *Geophysical Research Letters*, 43:7653–7660, 2016.
- [7] T. Loridan, L. Coates, **D. Argüeso**, S.E. Perkins-Kirkpatrick, and J. McAneney. The excess heat factor as a metric for heat related fatalities: defining heatwave risk categories. *Australian Journal of Emergency Management*, 31(4):31–37, 2016.
- [8] R. Olson, J.P. Evans, **D. Argüeso**, and A. Di Luca. The NARCLiM Project: Model Agreement and Significance of Climate Projections. *Climate Research*, 69(3):209–227, 2016.
- [9] A. Di Luca, J.P. Evans, A. Pepler, L.V. Alexander, and **D. Argüeso**. Evaluating the representation of Australian East Coast Lows in a regional climate model ensemble. *Journal of Southern Hemisphere Earth System Science*, 66:108–124, 2016.
- [10] S.E. Perkins, C. J. White, L.V. Alexander, **D. Argüeso**, G. Boschat, T. Cowan, J.P. Evans, M. Ekström, E.C.J. Oliver, and A. Purich. Natural hazards in Australia: heatwaves. *Climatic Change*, 139(1):101–114, 2016.
- [11] A. Di Luca, **D. Argüeso**, J.P. Evans, R. de Elía, and R. Laprise. Quantifying the overall added value of dynamical downscaling and the contribution from different spatial scales. *Journal of Geophysical Research*, 121(4):1575–1590, 2016.
- [12] I. Macadam, **D. Argüeso**, J.P. Evans, De Li Liu, and A.J. Pitman. The effect of bias correction and climate model resolution on wheat simulations forced with a Regional Climate Model ensemble. *International Journal of Climatology*, 36(14):4577–4591, 2016.
- [13] R. Lorenz, **D. Argüeso**, M. Donat, A.J. Pitman, B. van den Hurk, A. Berg, D. Lawrence, F. Cheruy, A. Ducharne, S. Hagemann, A. Meier, P. Milly, and S. Seneviratne. Influence of land-atmosphere feedbacks on temperature extremes in the GLACE-CMIP5 ensemble. *Journal of Geophysical Research-Atmospheres*, 121(2):607–623, 2016.
- [14] F. Ji, J.P. Evans, J. Teng, Y. Scorgie, **D. Argüeso**, A. Di Luca, and R. Olson. Evaluation of long-term precipitation and temperature WRF simulations for southeast Australia. *Climate Research*, 67:99–115, 2016.
- [15] **D. Argüeso**, A. Di Luca, and J.P. Evans. Precipitation over urban areas in the western Maritime Continent using a convection-permitting model. *Climate Dynamics*, 47(3):1143–1159, 2016.
- [16] A. Di Luca, J.P. Evans, A.S. Pepler, L. Alexander, and **D. Argüeso**. Resolution sensitivity of cyclone climatology over eastern Australia using six reanalysis products. *Journal of Climate*, 28:9530–9549, 2015.
- [17] S.E. Perkins, **D. Argüeso**, and C. J. White. Relationships between climate variability, soil moisture, and Australian heatwaves. *Journal of Geophysical Research*, 120:8144–8164, 2015.
- [18] M.R. Grose, J. Bhend, **D. Argüeso**, M. Ekström, A. Dowdy, P. Hoffman, J.P. Evans, and B. Timbal. Comparison of various climate change projections of eastern Australian rainfall. *Australian Meteorological and Oceanographic Journal*, 65(1):72–89, 2015.
- [19] J.M. Hidalgo-Muñoz, S.R. Gámiz-Fortis, Y. Castro-Díez, **D. Argüeso**, and M.J. Esteban-Parra. Long-range seasonal streamflow forecasting over the Iberian Peninsula using large-scale atmospheric and oceanic information. *Water Resources Research*, 51:3543–3567, 2015.

- [20] **D. Argüeso**, J.P. Evans, A.J. Pitman, and A. Di Luca. Effects of city expansion on heat stress under climate change conditions. *PLOS ONE*, 10(2):e0117066, 2015.
- [21] F. Ji, J.P. Evans, **D. Argüeso**, L. Fita, and A. Di Luca. Using large-scale diagnostic quantities to investigate change in east coast lows. *Climate Dynamics*, 45(9):2443–2453, 2015.
- [22] J.P. Evans, F. Ji, C. Lee, P. Smith, **D. Argüeso**, and L. Fita. A regional climate modelling projection ensemble experiment - NARClIM. *Geoscientific Model Development*, 7(2):621–629, 2014.
- [23] **D. Argüeso**, J.P. Evans, L.Fita, and K.J. Bormann. Temperature response to future urbanization and climate change. *Climate Dynamics*, 42(7-8):2183–2199, 2014.
- [24] **D. Argüeso**, J.P. Evans, and L.Fita. Precipitation bias correction of very high resolution regional climate models. *Hydrology and Earth System Sciences*, 17:4379–4388, 2013.
- [25] **D. Argüeso**, J.M. Hidalgo-Muñoz, S.R. Gámiz-Fortis, M.J. Esteban-Parra, and Y. Castro-Díez. High-resolution projections of mean and extreme precipitation over Spain using the WRF model (2070-2099 vs. 1970-1999). *Journal of Geophysical Research-Atmospheres*, 117(D12108), 2012.
- [26] **D. Argüeso**, J.M. Hidalgo-Muñoz, S.R. Gámiz-Fortis, M.J. Esteban-Parra, and Y. Castro-Díez. Evaluation of WRF mean and extreme precipitation over Spain: present climate (1970-1999). *Journal of Climate*, 25(14):4883–4897, 2012.
- [27] A.S. Kowalski and **D. Argüeso**. Scalar arguments of the mathematical functions defining molecular and turbulent transport of heat and mass in compressible fluids. *Tellus B*, 63B:1059–1066, 2011.
- [28] J.M. Hidalgo-Muñoz, **D. Argüeso**, S.R. Gámiz-Fortis, M.J. Esteban-Parra, and Y. Castro-Díez. Trends of extreme precipitation and associated synoptic patterns over the southern Iberian Peninsula. *Journal of Hydrology*, 409:497–511, 2011.
- [29] **D. Argüeso**, J.M. Hidalgo-Muñoz, S.R. Gámiz-Fortis, M.J. Esteban-Parra, J. Dudhia, and Y. Castro-Díez. Evaluation of WRF parameterizations for climate studies over Southern Spain using a multi-step regionalization. *Journal of Climate*, 24(21):5633–5651, 2011.
- [30] S.R. Gámiz-Fortis, J.M. Hidalgo-Muñoz, **D. Argüeso**, M.J. Esteban-Parra, and Y. Castro-Díez. Spatio-temporal variability in Ebro river basin (NE Spain): global SST as potential source of predictability on decadal time scales. *Journal of Hydrology*, 409:759–775, 2011.

Book chapters (2)

- [1] I. Bladé, Y. Castro-Díez, V. Altava-Ortiz, R. Ansell, and **D. Argüeso** et al. *Climate in Spain: Past, present and future. Regional climate change assessment report*, chapter 2: Atmospheric trends in the Iberian Peninsula during the instrumental period in the context of natural variability, pages 25–41. [F.F. Pérez and R. Boscolo (eds.)], Red Temática CLIVAR-España, 2010.
- [2] E. Sánchez, G. Míguez-Macho, and **D. Argüeso** et al. *Climate in Spain: Past, present and future. Regional climate change assessment report*, chapter 5: Regional climate projections over the Iberian Peninsula: climate change scenarios modeling, pages 69–80. [F.F. Pérez and R. Boscolo (eds.)], Red Temática CLIVAR-España, 2010.

Peer-reviewed conference papers (8)

- [1] B.C Bates, **D. Argüeso**, J.P. Evans, J. Green, A. Griesser, D. Jakob, A. Seed, R. Lau, E. Lehmann, A. Phatak, D. abbs, S. Lavender, K. Nguyen, T. Rafter, M. Thatcher, F. Zheng, S. Westra, and M. Leonard. Preliminary Assessment of the Impact of Climate Change on Design

- Rainfall IFD Curves. In *36th Hydrology and Water Resources Symposium (HWRS 2015)*, Hobart (Australia). 7-10 August 2015. URL <https://www.engineersaustralia.org.au/events/36th-hydrology-and-water-resources-symposium-hwrs-2015>.
- [2] J.P. Evans and **D. Argüeso**. WRF simulations of future changes in IFD curves. In *36th Hydrology and Water Resources Symposium (HWRS 2015)*, Hobart (Australia). 7-10 August 2015. URL <https://www.engineersaustralia.org.au/events/36th-hydrology-and-water-resources-symposium-hwrs-2015>.
- [3] J.P. Evans, A. Pepler, A. Di Luca, F. Ji, L. Alexander, and **D. Argüeso**. Future changes in Extreme East Coast Lows. In *36th Hydrology and Water Resources Symposium (HWRS 2015)*, Hobart (Australia). 7-10 August 2015. URL <https://www.engineersaustralia.org.au/events/36th-hydrology-and-water-resources-symposium-hwrs-2015>.
- [4] J.P. Evans, R. Olson, L. Fita, **D. Argüeso**, and A. Di Luca. NARcliM model performance including teleconnections with climate modes. In *21th International Congress on Modelling and Simulation (MODSIM2015)*, Gold Coast (Australia). 29 November- 4 December 2015. URL <http://www.mssanz.org.au/modsim2015/>.
- [5] F. Ji, J.P. Evans, Y. Scorgie, N. Jiang, **D. Argüeso**, A. Di Luca, and R. Olson. Change in Temperature Inversion for Southeast Australia. In *21th International Congress on Modelling and Simulation (MODSIM2015)*, Gold Coast (Australia). 29 November- 4 December 2015. URL <http://www.mssanz.org.au/modsim2015/>.
- [6] **D. Argüeso**, J.P. Evans, L.Fita, and K.J. Bormann. Simulated impact of urban expansion on future temperature heatwaves in Sydney. In *20th International Congress on Modelling and Simulation (MODSIM2013)*, Adelaide (Australia). December 2013. URL <http://www.mssanz.org.au/modsim2013/>.
- [7] J.P. Evans, L. Fita, **D. Argüeso**, and Y. Liu. Initial NARcliM Evaluation. In *20th International Congress on Modelling and Simulation (MODSIM2013)*, Adelaide (Australia). December 2013. URL <http://www.mssanz.org.au/modsim2013/>.
- [8] Fei Ji, M. Riley, H. Clarke, J.P. Evans, **D. Argüeso**, and L. Fita. High-resolution rainfall Projections for the Great Sydney Region. In *20th International Congress on Modelling and Simulation (MODSIM2013)*, Adelaide (Australia). December 2013. URL <http://www.mssanz.org.au/modsim2013/>.

Conference contributions (as presenting author only - 22)

- [1] **D. Argüeso**, A. Di Luca, J.P. Evans, and R. Romero. Simulating realistic precipitation with convection-permitting models in the Maritime Continent. In *Australian Meteorological and Oceanographic Society Annual Meeting and International Conference on Southern Hemisphere Meteorology and Oceanography 2018 - AMOS-ICSHMO 2018*, Sydney (Australia). 5-9 February 2018. URL <https://www.amos-icshmo2018.com.au>. Lightning **Oral Presentation** and Poster.
- [2] **D. Argüeso**, A. Di Luca, and J.P. Evans. Does convection-permitting resolution improve simulated precipitation in the Maritime Continent? In *International Conference on Regional Climate - CORDEX 2016*, Stockholm (Sweden). May 2016. URL <http://www.icrc-cordex2016.org>. **Oral Presentation**.
- [3] **D. Argüeso**, A. Di Luca, and J.P. Evans. Urban-enhanced precipitation in the Maritime Continent from a convection permitting model. In *Australian Meteorological and Oceanographic Society National Conference*, Melbourne (Australia). February 2016. URL <http://www.amos.org.au/ac2016>. **Oral Presentation**.

- [4] **D. Argüeso**, J.P. Evans, and A. Di Luca. Changes of temperature and humidity in areas of city sprawl under climate change conditions. In *9th International Conference on Urban Climate*, Toulouse (France). 20-24 July 2015. URL <http://www.meteo.fr/icuc9/>. **Oral Presentation.**
- [5] **D. Argüeso**, J.P. Evans, and A. Di Luca. Heat stress changes due to urban expansion and climate change. In *Cities in Future Earth: Third Australian Earth System Outlook*, Canberra, (Australia). December 2014. URL <https://www.science.org.au/resources/cities-future-earth-third-australian-earth-system-outlook-conference-8-9-december-2014-shi>.
- [6] **D. Argüeso**, J.P. Evans, and A. Di Luca. Impact of model spatial resolution on precipitation extremes. In *7th International Scientific Conference on the Global Water and Energy Cycle*, The Hague (The Netherlands). July 2014. URL <http://gewex.org/2014conf/home.html>.
- [7] **D. Argüeso**, J.P. Evans, L. Fita, A.J. Pitman, and A. Di Luca. Amplified climate change signal due to urban expansion at local scales from a regional climate model. In *3rd International Lund Regional-Scale Climate Modelling Workshop*, Lund (Sweden). June 2014. URL <http://www.baltex-research.eu/RCM2014/>. **Oral Presentation.**
- [8] **D. Argüeso**, J.P. Evans, and A. Di Luca. Simulated heat wave trends and changes in Australia over the last 60 years. In *AMOS National Conference 2014*, Hobart (Australia). February 2014. URL <http://www.amos2014.org.au/>.
- [9] **D. Argüeso**, J.P. Evans, L.Fita, and K.J. Bormann. Simulated impact of urban expansion on future temperature heatwaves in Sydney. In *20th International Congress on Modelling and Simulation (MODSIM2013)*, Adelaide (Australia). December 2013. URL <http://www.mssanz.org.au/modsim2013/>. **Oral Presentation.**
- [10] **D. Argüeso**, M.G. Donat, J.P. Evans, L.V. Alexander, and L. Fita. Trends in extreme indices in 60-year simulations over Australia. In *International Conference on Regional Climate - CORDEX 2013*, Brussels (Belgium). November 2013. URL <http://cordex2013.wcrp-climate.org/>.
- [11] **D. Argüeso**, J.P. Evans, and L.Fita. Regional Climate Modeling over Australia: Designing simulations towards impact assessment studies. In *International Workshop on Dynamical Downscaling*, Tsukuba (Japan). October 2013. **Invited Talk.**
- [12] **D. Argüeso**, J.P. Evans, and L.Fita. Precipitation bias correction of very high resolution regional models. In *Australian Meteorological and Oceanographic Society National Conference*, Melbourne (Australia). February 2013. URL <http://wired.ivvy.com/event/WXOCCX/>. **Oral Presentation.**
- [13] **D. Argüeso**, L. Fita, and J.P. Evans. Temperature response to future land-use changes in the sydney area. In *CoECS First Annual Workshop*, Hobart (Australia). September 2012. URL <http://www.climate-science.org.au/content/150-coecss-first-annual-workshop>.
- [14] **D. Argüeso**, J.M. Hidalgo-Muñoz, M.J. Esteban-Parra, S.R. Gámiz-Fortis, and Y. Castro-Díez. CLIVAR-SPAIN CONTRIBUTIONS: Evaluation of WRF ability to reproduce mean and extreme precipitation over Spain. In *WCRP OSC Climate Research in Service to Society*, Denver, CO (US). October 2011. URL <http://www.wcrp-climate.org/conference2011/index.html>.
- [15] **D. Argüeso**. Multi-step regionalization technique and regional model validation for climate studies. In *WRF Lecture Series at the Bjerknes Centre*, Bergen (Norway). September 2010. **Invited Talk.**
- [16] **D. Argüeso**, J.M. Hidalgo-Muñoz, D. Calandria-Hernández, S.R. Gámiz-Fortis, M.J. Esteban-Parra, and Y. Castro-Díez. Multi-step regionalization technique and regional model validation for climate studies. In *10th EMS Annual Meeting. 8th European Conference on Applied Climatology*, Zurich (Switzerland). September 2010. URL http://meetingorganizer.copernicus.org/EMS2010/poster_programme/3654.

- [17] **D. Argüeso**, J.M. Hidalgo-Muñoz, D. Calandria-Hernández, S.R. Gámiz-Fortis, M.J. Esteban-Parra, and Y. Castro-Díez. Regional climate simulations over complex topography using WRF: Andalusian present climate. In *10th EMS Annual Meeting. 8th European Conference on Applied Climatology*, Zurich (Switzerland). September 2010. URL http://meetingorganizer.copernicus.org/EMS2010/poster_programme/3654.
- [18] **D. Argüeso**, J.M. Hidalgo-Muñoz, M.J. Esteban-Parra, S.R. Gámiz-Fortis, D. Calandria-Hernández, and Y. Castro-Díez. MM5 sensitivity to boundary conditions and domain configuration for climate studies over Southern Spain. In *90th AMS Annual Meeting*, Atlanta, GA (US). January 2010. URL http://ams.confex.com/ams/90annual/techprogram/paper_159983.htm.
- [19] **D. Argüeso**, J.M. Hidalgo-Muñoz, S.R. Gámiz-Fortis, M.J. Esteban-Parra, and Y. Castro-Díez. An Analysis of MM5 sensitivity to different parameterizations for high-resolution climate simulations. In *EGU General Assembly*, Vienna (Austria). April 2009. URL <http://meetingorganizer.copernicus.org/EGU2009/EGU2009-9110-1.pdf>.
- [20] **D. Argüeso**, J.M. Hidalgo-Muñoz, S.R. Gámiz-Fortis, M.J. Esteban-Parra, and Y. Castro-Díez. Análisis de la respuesta del MM5 frente a diferentes parametrizaciones físicas para el sur de la Península Ibérica - Analysis of the MM5 response to different physics parameterizations in the south of the Iberian Peninsula. In *CLIVAR-ES. Clima en España: Pasado, presente y futuro. Contribución a un informe de Evaluación del Cambio Climático Regional*, Madrid (Spain), February 2009. URL: <http://clivar.iim.csic.es/?q=es/node/269/>.
- [21] **D. Argüeso**, M. España-Acebal, M. Staudt, S.R. Gámiz-Fortis, M.J. Esteban-Parra, and Y. Castro-Díez. Climate Variability and Climate Change. In *I Reunion sobre e-ciencia andaluza - I meeting on andalusian e-science*, Granada (Spain). June 2007. **Oral Presentation**.
- [22] **D. Argüeso**, M. España-Acebal, M. Staudt, S.R. Gámiz-Fortis, M.J. Esteban-Parra, and Y. Castro-Díez. Proyecto E-CA. In *I Reunion sobre e-ciencia andaluza - I meeting on andalusian e-science*, Granada (Spain). June 2007. **Oral Presentation**.

Conference Contributions (as co-author - 77)

- [1] A. Di Luca, R. de Elía, M. Bador, and **D. Argüeso**. Changes in hot extremes at different temporal and spatial scales. In *EGU General Assembly*, Vienna (Austria). 09 April - 13 April 2018. URL <https://meetingorganizer.copernicus.org/EGU2018/EGU2018-9540.pdf>.
- [2] G. Di Virgilio, J.P. Evans, A. Di Luca, R. Olson, and **D. Argüeso**. Evaluation of ERA-Interim-driven CORDEX regional climate model simulations over Australia. In *Australian Meteorological and Oceanographic Society Annual Meeting and International Conference on Southern Hemisphere Meteorology and Oceanography 2018 - AMOS-ICSHMO 2018*, Sydney (Australia). 5-9 February 2018. URL <https://www.amos-icsmo2018.com.au>.
- [3] A. Di Luca, **D. Argüeso**, N.C. Jourdain, and J.P. Evans. An approach to study the future intensity of extreme East Coast Lows. In *Australian Meteorological and Oceanographic Society Annual Meeting and International Conference on Southern Hemisphere Meteorology and Oceanography 2018 - AMOS-ICSHMO 2018*, Sydney (Australia). 5-9 February 2018. URL <https://www.amos-icsmo2018.com.au>.
- [4] J.P. Evans, **D. Argüeso**, and A. Di Luca. Future Heatwaves in NSW from the NARcliM ensemble. In *22th International Congress on Modelling and Simulation (MODSIM2017)*, Hobart (Australia). 3 - 8 December 2017. URL <https://www.mssanz.org.au/modsim2017/>.
- [5] J.P. Evans, **D. Argüeso**, and A. Di Luca. Convection-Permitting Regional Climate Modelling of the Maritime Continent and the Impact of Urban Areas. In *14th Annual Meeting Asia Oceania Geo-*

sciences Society 2017, Singapore (Singapore). 6-11 August 2017. URL <http://www.asiaoceania.org/aogs2017/>. **Oral Presentation.**

- [6] **D. Argüeso**, S. Businger, and T. Dunn. Improvement of tropical cyclone forecasting through lightning assimilation in WRF. In *6th International Summit on Hurricanes and Climate Change: From Hazard to Impact*, Heraklion, Crete (Greece). 4-9 June 2017. URL <https://www.aegeanconferences.org/src/App/conferences/view/114/>.
- [7] J.P. Evans, **D. Argüeso**, and A. Di Luca. Convection-Permitting Regional Climate Modelling of the Maritime Continent and the Impact of Urban Areas. In *97th AMS Annual Meeting 2017*, Seattle, WA (US). 22-26 January 2017. URL <https://annual.ametsoc.org/2017/>. **Oral Presentation.**
- [8] C. Dutheil, C. Menkes, M. Lengaigne, N. C. Jourdain, J. Vialard, M. Bador, L. Terray, A. Di Luca, **D. Argüeso**, and B. Sultan. SPCZ and cyclone future evolutions. In *AGU Fall Meeting 2016*, San Francisco, CA (US). 12-16 December 2016.
- [9] A. Di Luca, J.P. Evans, N. C. Jourdain, and **D. Argüeso**. Using convection permitting simulations to study the intensity of extreme East Coast Lows. In *GEWEX Convection-Permitting Climate Modeling Workshop*, Stockholm (Sweden). 6-8 September 2016. URL <https://ral.ucar.edu/events/2016/gewex-convection-permitting-climate-modeling-workshop>. **Oral Presentation.**
- [10] Y. Li, N. Jourdain, A.S. Taschetto, A. Sen Gupta, **D. Argüeso**, S. Masson, and W. Cai. Resolution Dependence Of The Precipitation And Diurnal Cycle Over The Maritime Continent. In *AOGS Annual Meeting 2016*, Beijing (China). 31 Jul-5 Aug 2016. URL <http://www.asiaoceania.org/aogs2016/public.asp?page=home.htm>.
- [11] I. Macadam, **D. Argüeso**, J.P. Evans, D.L. Liu, and P.H. Whetton. Using Regional Climate Model output to force wheat simulations. In *International Conference on Regional Climate - CORDEX 2016*, Stockholm (Sweden). May 2016. URL <http://www.icrc-cordex2016.org>.
- [12] A. Di Luca, **D. Argüeso**, J.P. Evans, R. de Elía, and R. Laprise. Quantifying the overall added value of dynamical downscaling and the contribution from different spatial scales. In *International Conference on Regional Climate - CORDEX 2016*, Stockholm (Sweden). May 2016. URL <http://www.icrc-cordex2016.org>. **Oral Presentation.**
- [13] J.P. Evans, **D. Argüeso**, X. Yang, R. Olson, and A. Di Luca. Future changes in extreme precipitation, rainfall erosivity and hillslope erosion in southeast Australia. In *TCCIP Workshop on Application of Climate Change Projections*, Taipei (Taiwan). 8-10 March 2016.
- [14] C. A. Jamandre, M. Hart, **D. Argüeso**, and A.J. Pitman. Urban growth within Sydney - effects of urban densification and vertical expansion. In *Australian Meteorological and Oceanographic Society National Conference*, Melbourne (Australia). February 2016. URL <http://www.amos.org.au/ac2016>. **Oral Presentation.**
- [15] J.P. Evans and **D. Argüeso**. Future projections of short time scale precipitation extremes over Sydney. In *Australian Meteorological and Oceanographic Society National Conference*, Melbourne (Australia). February 2016. URL <http://www.amos.org.au/ac2016>. **Oral Presentation.**
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- [74] J.M. Hidalgo-Muñoz, D. Calandria-Hernández, **D. Argüeso**, S.R. Gámiz-Fortis, M.J. Esteban-Parra, and Y. Castro-Díez. Variabilidad espacio-temporal de los caudales en la cuenca hidrográfica del Guadalquivir. In *XXXII Reunión Bienal Real Sociedad Española Física y 18º Encuentro Ibérico para la enseñanza de la Física. Comunicaciones científicas*, Ciudad Real (Spain), September 2009. 978-84-692-4956-7.
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Technical reports (4)

- [1] **D. Argüeso**, A. Di Luca, J.P. Evans, M. Parry, M. Gross, L. Alexander, D. Green, and S.E. Perkins. Heatwaves affecting NSW and the ACT - recent trends, future projections and associated impacts on human health. Technical report, NARcliM Technical Note 5, June 2015. [Download](#).
- [2] J.P. Evans and **D. Argüeso**. Guidance on the use of bias corrected data. Technical report, NARcliM Technical Note 3, April 2014. [Download](#).
- [3] J.P. Evans, **D. Argüeso**, R. Olson, and A. Di Luca. NARcliM Extreme Precipitation Indices Report. Technical report, NARcliM Technical Note 6, July 2015. [Download](#).
- [4] R. Olson, J.P. Evans, **D. Argüeso**, and A. Di Luca. NARcliM Climatological Atlas. Technical report, NARcliM Technical Note 4, December 2014. [Download](#).

Teaching

2015/2016: Co-supervision of a scholarship student through a 6-week summer research program. Project title: "How extreme will Australia's climate get by the late 21st century". Faculty of Science. University of New South Wales, Australia.

2015: Climate Systems Science (CLIM3001) - Regional climate modelling, statistical and dynamical downscaling. Global and regional climate projections (2 hours). 3rd Year Undergraduate course for Science students. Faculty of Science. University of New South Wales, Australia.

2014/2015: Co-supervision of a scholarship student through a 6-week summer research program. Project title: "Quantifying rainfall falling from East Coast Cyclones". Faculty of Science. University of New South Wales, Australia.

2013: Dynamical downscaling of temperature and precipitation over the Iberian Peninsula. Course (4 hours) for the students of the Master in Geophysics and Meteorology (GEOMET). University of Granada, Spain

2010/2011: Physics. 1st Year of Environmental Sciences Degree. Laboratory lessons (40 hours). Applied Physics Department. University of Granada, Spain.

2010: Matlab 2010a: Introduction to Matlab. Course (4 hours) for the students of the Master in Geophysics and Meteorology (GEOMET). University of Granada, Spain

2009/2010: Fundamentals of Physics. 1st Year of Environmental Sciences Degree. Laboratory lessons (60 hours). Applied Physics Department. University of Granada, Spain.

2008/2009: Fundamentals of Physics. 1st Year of Environmental Sciences Degree. Laboratory lessons (60 hours). Applied Physics Department. University of Granada, Spain.

Technical Skills

Operative Systems: Unix/Linux, Mac OSX 10.10, Windows 8

Programming Languages: Python, Fortran90, Matlab 2014, shell scripting, NCL, GMT, Latex

Climate tools: Climate Data Operators (CDO), netCDF Operator (NCO)

Regional Climate Models: MM5 and WRF (In serial and high-performance parallel supercomputers)

Graphic skills: Adobe Photoshop CC, Adobe Illustrator CC

Other skills: Version control software (GIT), Large datasets management (~PBs)

Languages

Mother Tongue: Spanish

Fluent:

- English - Certificate in Advanced English (CAE) from University of Cambridge (UK)
- Italian
- Portuguese

Basic: French

Participation in research projects

2018-2021 *A regional coupled climate model for Australia*

Project ID: ARC DP180101251

Financed by: Australian Research Council

Chief Investigator(CI): Dr. Alexander Sen Gupta and Dr. Alejandro Di Luca Partner Investigators (PI):
Dr. Daniel Argüeso and Dr. Nicolas Jourdain

2018-2021 *Cambio climático a corto plazo: Predicción decenal regionalizada para la Península Ibérica. Influencia de las interacciones tierra-atmósfera en los recursos hídricos (PREPARATE)*

Project ID: CGL2017-89836-R

Financed by: Spanish Ministry of Economy, Competitiveness and Industry (Ministerio de Economía, Competitividad e Industria)

Lead Researcher: Prof. María Jesús Esteban-Parra

2018-2020 *Fenónomos meteorológicos severos en zonas costeras mediterráneas: retos de predictabilidad y análisis climático - Severe meteorological phenomena in Mediterranean coastal areas: predictability challenges and climatic analysis (COASTEPS)*

Project ID: CGL2017-82868-R

Financed by: Spanish Ministry of Economy, Competitiveness and Industry (Ministerio de Economía, Competitividad e Industria)

Lead Researcher: Prof. Victor Homar

2017-2019 *Simulating Realistic High-resolution Precipitation in the Maritime Continent (REHIPRE)*

Project ID: H2020-MSCA-IF-2016-743547

Financed by: European Union - European Commission - Horizon 2020 Program

Lead Researcher: **Dr. Daniel Argüeso**

2016-2017 *Investigation of the Long-Range Lightning Datastream for Improved Storm Forecasting*

Financed by: Jonathan Merage Foundation

Lead Researcher: Prof. Steven Businger

2015-2017 *Creation of Gridded Energy Datasets for Solar and Wind Power on Oahu*

Financed by: Hawaii Natural Energy Institute (HNEI)

Lead Researcher: Prof. Steven Businger

2015-2015 *Heatwaves affecting NSW and ACT*

Financed by: NSW Office of Environment and Heritage

Lead Researchers: A/Prof. Jason P. Evans, Dr. Donna Green and A/Prof. Lisa V. Alexander

2015-2015 *Rainfall extremes affecting NSW and ACT*

Financed by: NSW Office of Environment and Heritage

Lead Researcher: A/Prof. Jason P. Evans

2013-2017 *Impactos del Cambio Climático en la cuenca del Guadalquivir (LICUA) - Climate Change impacts in the Guadalquivir catchment (LICUA)*

Financed by: Regional Government of Andalusia (*Junta de Andalucía*)
Lead Researcher: Prof. María Jesús Esteban-Parra

2011–2014 *New South Wales and ACT Regional Climate Modelling (NARcliM)*

Financed by: Consortium of project partners (NSW Office of Environment and Heritage, UNSW, ACT Environment and Sustainable Development Directorate, Sydney Water, Sydney Catchment Authority, Hunter Water, NSW Department of Transport, NSW Department of Primary Industry, NSW Office of Water)

Lead Researcher: A/Prof. Jason P. Evans

Website: <http://www.ccrcc.unsw.edu.au/NARcliM/>

2011–2013 *Proyecciones de Cambio Climático para el caudal de los ríos ibéricos (CARIBE) – Climate Change projections of Iberian river flows (CARIBE)*

Financed by: Spanish Ministry of Education and Science (*Ministerio de Educación y Ciencia*)

Lead Researcher: Prof. María Jesús Esteban-Parra

2007–2010 *Proyecciones de Cambio Climático de alta resolución en Andalucía mediante un modelo de mesoscala (PROCLIAN) – High-resolution projections of Climate Change scenarios over Andalusia using a mesoscale model (PROCLIAN)*

Financed by: Regional Government of Andalusia (*Junta de Andalucía*)

Lead Researcher: Prof. Yolanda Castro-Díez

2007–2010 *Impactos de la variabilidad climática en la predicción anual y estacional del caudal de los ríos ibéricos (PREDICA) – Climate variability impact on annual and seasonal prediction of Iberian rivers flow (PREDICA)*

Financed by: Spanish Ministry of Education and Science (*Ministerio de Educación y Ciencia*)

Lead Researcher: Prof. Yolanda Castro-Díez

Visits to external centers

03/2018 **Institut de Institut des Géosciences de l'Environnement, Centre National de la Recherche Scientifique, France - Visit**

Topic: Adaptation of NEMO-OASIS-WRF coupled model to convection-permitting experiments in the Maritime Continent.

02/2018 **University of New South Wales, Australia - Visit**

Topic: Ocean-atmosphere coupled model in the Australian East Coast.

09/2010 **Bjerknes Centre for Climate Research, Norway - Visit**

Topic: Challenges in the use of WRF for climate change research

08/2010–11/2010 **National Center for Atmospheric Research (NCAR), US - Visit**

Topic: Parameterization tests over Iberian Peninsula for climate studies and evaluation of boundary conditions

02/2008 **Universidad de Murcia, Spain - Visit**

Topic: MM5 modifications for climate studies

Other Experience

Peer Reviewing

Nature Climate Change, Journal of Climate, Climate Dynamics, Geophysical Research Letters, Geoscientific Model Development, Environmental Research Letters, Climate Research, Theoretical and Applied Climatology, Advances in Science and Research, Hydrology and Earth System Sciences, Journal of Hydrometeorology, Urban Climate, Climatic Change, Asia-Pacific Journal of Atmospheric Sciences, Chinese Journal of Oceanology and Limnology, International Journal of Climatology, Journal of the Southern Hemisphere Earth Systems Science, Journal of Advances in Modeling Earth Systems

Expert reviewer of project proposals for the Spanish National Research Program (2013, 2014, 2015)

Organising Committee

Member of the organising committee of the Maritime Continent Workshop held in Melbourne 5-6th November 2015 that brought together 35 scientists from 7 different institutions in Australia and New Zealand.

Travel grants and other financial support

AMOS: Registration fee waiver. Attendance to AMOS-ICSHMO 2018, Sydney (Australia)

CORDEX and WCRP: Early Career Researcher Travel Support (approx. \$500). Attendance to CORDEX conference 2016, Stockholm (Sweden)

Australian Academy of Sciences (\$300). Accommodation during Cities in Future Earth conference 2014, Canberra (Australia)

UCAR and WCRP: Early Career Research Travel Support (\$900). Attendance to GEWEX conference 2014, The Hague (The Netherlands)

CORDEX: Early Career Researcher Travel Grant (approx. \$3000). Attendance to CORDEX conference 2013, Brussels (Belgium)

CLIVAR-Spain Travel Grant (approx. \$700) for WCRP 2011, Denver, CO (US).

Regional Government of Andalusia Travel Grant (approx. \$5000), stay at NCAR 2009, Boulder, CO (US).

Attendance to Courses

WRF, WRF-Var and WRF-Chem tutorials. National Center for Atmospheric Research (NCAR).
14-24 July 2008. Boulder (CO), US.

11th EGEE/EELA/EUMedGrid Tutorial. Computational Andalusian Center for Science (CICA).
10-12 September 2007. Seville, Spain.

Proyección regional de escenarios de cambio climático. Técnicas y proyectos en curso. Universidad de Cantabria.
23-27 July 2007, Suances, Spain.

Outreach and Media

My research has captured the interest of general public media. My recent work on urban expansion in Sydney had significant coverage on radio and newspapers across Australia and New Zealand (i.e. ABC radio, The Sydney Morning Herald), including live interviews. Previously, various Spanish nationwide media reported on the results of my PhD Thesis just after its publication, including the national broadcasting channel TVE.

Contribution to a video explaining potential impacts of climate change in New South Wales (NSW, Australia) to the general public in collaboration with the NSW Office of Environment and Heritage ([link to video](#))

Participation in a video created by University of New South Wales and the ARC Centre of Excellence for Climate Science to promote climate science and science in general among high school and undergraduate students, where different scientists tell their views on a science career and try to bring their experience closer to students.

September 5, 2018