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ResearchGate profile
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Julián Alberto Giles

I am a Physicist and PhD in Atmospheric Sciences currently working at the Center for Atmosphere and Ocean Research (CIMA), at the University of Buenos Aires. I am part of a multidisciplinary research group that studies land-atmosphere coupling mechanisms in South America and their effect on the regional climate. I have 5 years of experience using Python data science ecosystem for analyzing large georeferenced datasets such as climate models, reanalysis and satellite products to study the effects of the land-atmosphere coupling on the atmospheric circulation, temperature and precipitation in the region.

Education

MAR 2016 – MAR 2021

PhD in Atmospheric Sciences / Faculty of Exact and Natural Sciences, University of Buenos Aires

Thesis subject: Local and non-local impacts of soil moisture variability on the South American climate from interannual to diurnal scales.
Thesis advisors: Claudio G. Menéndez, Romina C. Ruscica
Scholarship: 5-year PhD Scholarship from CONICET (Argentinian National Council of Research and Development)
Special Courses taken: Climatology; Large Scale Atmospheric Processes; Statistical Methods for Atmospheric Sciences; Climate Models: Past, Present and Future; Specialized Scientific Communication; Land-Atmosphere Interaction and its Modeling

FEB 2009 – FEB 2016

"Licenciatura" in Physics (Argentina University degree with Master Level) / Faculty of Exact Sciences, Engineering and Surveying, National University of Rosario

Thesis subject: Buildings Energy Simulation. Evaluation of constructive elements to modify the behavior of the façade.
Thesis advisors: Analía G. L. Gastón, Hugo D. Navone

Publications

Journals:

- **Giles, J. A.**; Ruscica, R. C.; Menéndez C. G. (2021) Warm-season precipitation drivers in northeastern Argentina: diurnal cycle of atmospheric moisture balance and land-atmospheric coupling. International Journal of Climatology, 41 (Suppl. 1): E768– E778. https://doi.org/10.1002/joc.6724
- Coronato, T., Carril, A. F., Zaninelli, P., **Giles, J.**, Ruscica, R., Falco, M., Sörensson, A. A., Fita, L., Laurent, Z. X. L., Menéndez, C. G. (2020) The impact of soil moisture-atmosphere coupling on daily maximum surface temperature in Southeastern South America. Climate Dynamics, 55, 2543–2556. https://doi.org/10.1007/s00382-020-05399-9
- **Giles, J. A.**; Ruscica, R. C.; Menéndez C. G. (2020) The diurnal cycle of precipitation over South America represented by five gridded datasets. International Journal of Climatology, 40(2), 668-686. https://doi.org/10.1002/joc.6229

- Menéndez, C. G., **Giles, J.**, Ruscica, R., Zaninelli, P., Coronato, T., Falco, M., Sörensson, A., Fita, L., Carril, A. and Li, L. (2019) Temperature variability and soil–atmosphere interaction in South America simulated by two regional climate models. Climate Dynamics, 53 (5-6), 2919–2930. https://doi.org/10.1007/s00382-019-04668-6

Conference proceedings:

- Coronato, T.; **Giles, J.**; Abalone, R.; Gastón, A.; Navone, H. (2015) The Physics of Buildings: Design of an introductory teaching strategy based on EneryPlus (*Física de edificios: Diseño de una estrategia didáctica de carácter introductorio basada en EnergyPlus*). *IX Jornada de Ciencia y Tecnología, Rosario, Argentina.* CD-ROM, 2073 p., PDF 978-987-702-187-5, pp. 781-788010

Research Experience

MAR 2021 – PRESENT

Postdoc / Centro de Investigaciones del Mar y la Atmósfera (UBA-CONICET)

Research Team: Mechanisms of the regional climate and their impacts (*Mecanismos del clima regional y sus impactos*) http://www.cima.fcen.uba.ar/illapa.php
Head researcher: Claudio G. Menéndez

MAR 2016 – MAR 2021

PhD Intern / Centro de Investigaciones del Mar y la Atmósfera (UBA-CONICET)

Research Team: Mechanisms of the regional climate and their impacts (*Mecanismos del clima regional y sus impactos*) http://www.cima.fcen.uba.ar/illapa.php
Head researcher: Claudio G. Menéndez

MAR 2015 – FEB 2016

Student Research Assistant / Laboratory of Alternative Energies, Institute of Physics Rosario (National University of Rosario - CONICET)

Advisor: Analía G. L. Gastón
https://www.ifir-conicet.gov.ar/index.php/es/investigacion/2015-03-31-19-43-28/laboratorio-de-energias-alternativas

Skills:

- **Programming:** 5+ years of experience using Python in daily workflow, particularly Python statistical and geoscience packages (Numpy, Pandas, Scipy, xarray, cartopy, matplotlib). Experience with CDO, Latex and Linux/UNIX/Bash interface. Basic skills in R, MATLAB and NCL.
- **Climatology:** 5+ years of experience analyzing data from regional climate models, reanalysis and satellite-derived products.
- **Climate modelling:** Basic skills with climate models RegCM4 and LMDZ.
- **Languages:** Spanish (native), English (advanced), Italian (beginner).

Awards

- Outstanding Presentation Award at the Early Career Researcher and Student Presentation Competition during the 8th GEWEX Open Science Conference (Canmore, Canada, 2018). http://ozewex.org/8th-gewex-science-conference-extremes-and-water-on-the-edge/

Oral and poster presentations in conferences

Reunión Anual Unión Geofísica Mexicana 2021 — *Guadalajara, México / Virtual*, *November 2021*
Poster: Soil moisture interannual variability links two South American land-atmosphere coupling hot spots
Giles, J. A.; Ruscica, R. C.; Menéndez, C. G.

International Conference on Regional Climate-CORDEX 2019 — *Beijing, China*, *October 2019*
Poster: Diurnal cycle of precipitation and atmospheric humidity flux in South America: role of land-atmosphere interactions
Giles, J. A.; Ruscica, R. C.; Menéndez, C. G.

8th GEWEX Open Science Conference — *Canmore, Canada*, *May 2018*
Poster: The diurnal cycle of precipitation over South America and how preceding soil moisture conditions can affect precipitation events
Giles, J. A.; Ruscica, R. C.; Menéndez, C. G.

3rd South American Conference on Buildings Energy Simulations — *Buenos Aires, Argentina*, *November 2016*
(*3er Congreso Sudamericano de Simulación de Edificios*)
Talk: Buildings Energy Simulation. Evaluation of constructive elements to modify the behavior of the façade (*Simulación Energética de Edificios. Evaluación de elementos constructivos para modificar el comportamiento de la envolvente*)
Giles, J. A.; Gastón, A.; Navone, H.

IX Meeting on Science and Technology — *Rosario, Argentina*, *November 2015*
(*IX Jornada de Ciencia y Tecnología*)
Poster: The Physics of Buildings: Design of an introductory teaching strategy based on EneryPlus (*Física de edificios: Diseño de una estrategia didáctica de carácter introductorio basada en EnergyPlus*). CD-ROM, 2073 p., PDF 978-987-702-187-5, pp. 781-788010
Coronato, T.; **Giles, J.**; Abalone, R.; Gastón, A.; Navone, H.

Poster: Thermal simulation of ventilated façades with COMSOL Multiphysics (*Simulación térmica de fachadas ventiladas mediante COMSOL Multiphysics*)
Giles, J.; Gastón, A.; Navone, H.

99th Meeting of the Argentine Physics Association — *Tandil, Argentina*, *September 2014*
(*99va Reunión Nacional de Física*)
Poster: Thermal modulation of beehives with a selected regulatory substance based on its phase change (*Control térmico de colmenas con sustancia reguladora de cambio de fase*)
Coronato, T., **Giles, J.**, Lara, M. A.

Workshops

Second Workshop on Regional Climate Modeling and Extreme Events over South America — *São Paulo, Brazil*, *November 2018*
IAG / University of São Paulo

Oral Presentations in English — *Buenos Aires, Argentina*, *October-November 2017*
Faculty of Exact and Natural Sciences, University of Buenos Aires

Other Activities

Earth Sciences Week (*Semana de las Ciencias de la Tierra*) — *Buenos Aires, Argentina*
Collaboration as scientific communicator for middle-school students. Topic: ENOS and climate change (*El Niño y cambio climático*) — *May 2017*

Community Manager of CIMA's social media accounts (Facebook and Twitter) — *Buenos Aires, Argentina*
November 2016 - Present

Online Courses

Introduction to Environmental Science — *edx.org*
Dartmouth College — *March 2015*

Solar Energy — *edx.org*
Delft University of Technology — *December 2014*

Global Warming Science — *edx.org*
Massachusetts Institute of Technology — *May 2014*