Ms. Andressa Andrade Cardoso

80, Kings Road, Reading, United Kingdom | cardoso.andressa.andrade@gmail.com |
https://orcid.org/0000-0002-6371-6722 | https://github.com/AndressaCardo

EDUCATION

Ph.D. in Atmospheric Science   **September 2024**
Universidade de São Paulo (USP), Brazil.
    Advisor: Prof. Dr. Rosmeri Porfirio da Rocha
    Dissertation title: "Assessing and classifying synoptic-scale cyclones over South America in high-resolution simulations in the present and future climate projections".

MSc in Atmospheric Science.   **August 2017 - December 2019**
Universidade de São Paulo (USP), Brazil
    Dissertation title: "Subtropical cyclones and surface winds in the southwestern South Atlantic Ocean: climatology and extremes".
    Advisor: Prof. Dr. Rosmeri Porfirio da Rocha

BSc in Meteorology   **March 2013 – March 2017**
Universidade Júlio de Mesquita Filho (UNESP), Brazil
    Dissertation title: "Characterization of the precipitation rate of meteorological systems operating in Bauru/SP".
    Advisor: Prof. Dr. Clara Miho Narukawa Iwabe

EXPERIENCE

Postdoctoral Researcher   **2024-present**
School of Mathematical Physical & Computational Sciences, Department of Meteorology, University of Reading
Project: Diabatic influences on current and future hazardous Mediterranean cyclones
Funded by: NERC
Manager: Suzanne L. Gray

Ph.D Fellowship   **2022-2024**
Sandwich Training Education Programme (STEP) in the Abdus Salam International Centre for Theoretical Physics, Italy
Earth System Physics (ESP) section.
Advisor: Dr. Erika Coppola
Funded by: The International Atomic Energy Agency (IAEA)
I have been involved in the following activities:
- Manipulation of CMIP6 datasets, statistics calculations and creation of geospatial fields using CDO, R and Python software;
- Application of different types of storm track schemes
- Run regional climate model (RegCM) and MetUM

Research   **2018 - 2022**
Project: Climate Scenarios and Extremes of Wind and Waves in the southeastern Brazilian basins (Santos, Campos and Espírito Santo).
Coordinator: Profa. Dra. Rosmeri Porfirio da Rocha
Funded by: Petrobras/Brazil

I have been involved in the following activities:
- Manipulation of geospatial datasets and time series using R software;
- Statistics calculations (average, density, percentile, root mean square error, standard deviation);
- Analysis of the fields focuses on the wind speed at the surface and the impact on the coastal area;
- Preparation of reports and scientific articles;

Research   **2018 - present**
Project: High-resolution climate regionalization for South America and the South Atlantic Ocean: trends and classification of cyclonic systems.
Coordinator: Prof. Dr. Rosmeri Porfirio da Rocha
Funded by: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)
I have been involved in the following activities:
- Manipulation of geospatial datasets and time series using R and Python software;
- Manipulation of Regional and Global Climate Models, and reanalysis datasets;
- Application of track scheme
- Preparation of reports, presentations and scientific articles;

Member of Grupo de Estudos Climáticos (GReC)   **2017-present**
http://www.grec.iag.usp.br/data/index_BRA.php.
Coordinators: Prof. Dr. Tércio Ambrizzi and Prof. Dr. Rosmeri Porfirio da Rocha.
I have been involved in the following activities:
- Presentation and analysis of the monthly climate monitoring over Brazil and the world;
- Elaboration of reports;

Research   **2014 – 2018**
Project: Alert monitoring system for extreme hydrological flood-type events.
Coordinator: Dr. Diego Oliveira de Souza
Funded by: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) 455990/2014-0
I have been involved in the following activities:
- Manipulation of geospatial datasets;
- Selection of precipitation extreme events for a city;
- Elaboration of reports.

TECHNICAL SKILLS

- Software (R: advanced, Python: intermediate, Matlab: beginner, CDO: advanced, Grads: intermediate, FORTRAN: beginner);
- Microsoft Office (Word, PowerPoint and Excel): Intermediate;
- Shell script (GNU/Linux environment): Advanced;
- Model skills: Regional Climate Model (RegCM): beginner and MetUM Metoffice: Intermediate

LANGUAGES

Portuguese: Native Speaker
English: Advanced
Italian: Intermediate

PUBLICATIONS

Cardoso, A.A., Mindlin, J., Coppola, E. *et al.* A storyline approach to select the CMIP6 model ensemble to be downscaled for the South America domain. *Clim Dyn* **64**, 82 (2026). https://doi.org/10.1007/s00382-025-08017-8.

Pampuch, L. A., Bueno, P. G., Reboita, M. S, Tomaziello, A. C. N., Nunes, A. M. P., **Cardoso, A. A**., Coelho, C. A. S., Carpenedo, C. B., Vasconcelos, F. C, Gomes, H. B., Pinheiro, H. R., Braga, H. A., Borges, I. V. G., Custodio, M. S., da Silva, M. L., Llopart, M., da Rocha, R. P., Ambrizzi, T., & da Silva, G. A. M. (2025). Brazil climate highlights 2023. *Ann NY Acad Sci.*, 1549, 120–138. **https://doi.org/10.1111/nyas.15394**

Gramcianinov, C. B., **Cardoso, A. A.,** da Silva, N. P., Luna-Niño, R., Castillo, N., Cavazos, T, da Rocha, R. P. Early-stage extratropical cyclones' mechanisms over South America: RCM added value and future changes in a warmer planet (2025). *International Journal of Climatology*.

Coppola, E., Giorgi, F., Giuliani, G., Pichelli, E., Ciarlo, J. M., Raffaele, F., Nogheretto, R., Reboita, M. S., Lu, C., Zazulie, N., Vargas-Heins, L., **Cardoso, A. A.**, de Leeuw, J. The 5th generation regional climate modeling system, RegCM5: the first convection-permitting European wide simulation and validation over the CORDEX-CORE domains. *Clim Dyn* **63**, 428 (2025). https://doi.org/10.1007/s00382-025-07913-3.

Cardoso, A. A., da Rocha, R. P., Reboita, S. M., Crespo, M. N, Conrado, E & Vidale, L. P**.** Performance of the medium and high horizontal resolution models from HighResMIP-CMIP6 in simulating synoptic-scale cyclones over the South America (2025). *Climate Dynamics*.

Bueno, P. G., Rehbein, A., Crespo, N. M., **Cardoso, A. A**., Gozzo, L. F. , Tomaziello, A. C. N., Kovalski, M. L., Braga, H. A., Borges, I. V. G., Pinheiro, H. R., Carpenedo, C. B. , Reboita, M. S., Drumond, A. R. de M., Pampuch, L. A., Silva, G. A. M. da, Pezza, A., Custodio, M., Llopart, M., Ambrizzi, T., Dutra, L. M. M., & Rocha, R. P. da. (2023). Grupo de estudos climáticos: 25 anos de história e produção científica. *Terrae Didatica*, *19*(00), e023013. https://doi.org/10.20396/td.v19i00.8671983

Cardoso, A. A., da Rocha, R. P., & Crespo, N. M. (2022). Synoptic climatology of subtropical cyclone impacts on near-surface winds over the South Atlantic basin. *Earth and Space Science*, 9, e2022EA002482. https://doi.org/10.1029/2022EA002482

Crespo, N.M., Silva, N.P., Palmeira, R.M.J., **Cardoso, A. A** et al*.* Western South Atlantic Climate Experiment (WeSACEx): extreme winds and waves over the Southeastern Brazilian sedimentary basins. *Clim Dyn* **60**, 571–588 (2022). https://doi.org/10.1007/s00382-022-06340-y

CONFERENCE PRESENTATIONS

Oral presentations

Cardoso, A. A and da Rocha, R. P. (April 2024). Assessing high-resolution global climate models in simulating subtropical cyclones over the southeast coast of Brazil. EGU General Assembly 2024, Vienna, Austria.

Cardoso, A. A. and other authors. (April 2023). A storyline approach to select the CMIP6 model ensemble to be downscaled for the South America domain. EGU General Assembly 2023, Vienna, Austria.

Cardoso, A. A. and other authors. (September, 2022). Early-stages lower level structure of extratropical cyclones over South America: RCM added value and future changes. Conference on Regional Climate Modeling and Extreme Events over South America: results from the CORDEX Flagship Pilot Study. Buenos Aires, Argentina.

Cardoso, A. A.; Wainer, I. Modes of variability in the Tropical Atlantic and its influences on the precipitation regime in Brazil. (May 2021). EGU General Assembly 2021, Vienna, Austria (Online).

Poster presentations
Cardoso, A. A. and others**.** Diabatic influences on hazardous Mediterranean cyclones. (June, 2025). Stormtracks 2025 workshop. Rosendal, Norway.

Cardoso, A. A. and other authors. The selection of Global Climate Models based on the storyline approach to be downscaled over the South American domain (October 2023). The WCRP Open Science Conference, Kigali, Rwanda

Cardoso, A. A. and other authors. Future climate projections of cyclones in RegCM4.7 over South America and South Atlantic Ocean (September 2023). ICRC-Cordex, Trieste, Italy

Cardoso, A. A; da Rocha, R.P; Crespo N.M. Low-level winds and precipitation associated with subtropical cyclones over the western South Atlantic basin (June 2023). 2nd MedCyclones workshop & 9th European Storm Workshop, Toulouse, France

COMPLEMENTARY EDUCATION

Introduction to R with application in Atmospheric Sciences (30h), 2018. São Paulo, Brazil

Second Workshop on Regional Climate Modeling and Extreme Events over South America (November 2018), São Paulo, Brazil CORDEX CAM/SAM Online Follow-up Workshop.

Analysis of oceanographic data with Python. (10h). XVI Semana temática de Oceonografia – explorando a interface terra-mar (12-16 July 2021), Brazil (online).

Meteorology applications using Python (18h). University extension course diffusion modality (14-18 Feb 2022), Brazil.