

Special Issue

Large-Scale Circulation Influences on Tropical Cyclone Intensity and Track

Message from the Guest Editors

Tropical cyclone (TC) intensity and track are closely linked to the large-scale atmospheric circulation in which they are embedded. Environmental steering flow, background thermodynamic and dynamic conditions, and multiscale atmospheric variability contribute to variations in storm motion, translation speed, structural evolution, and intensity change. However, the understanding of how these influences vary across different timescales and during coastal approach, landfall, and post-landfall evolution remains incomplete.

This Special Issue aims to advance the understanding of the role of large-scale circulation in influencing TC behavior across temporal and spatial scales. We invite contributions that examine large-scale circulation features, including but not limited to steering flow, vertical wind shear, environmental moisture, upper-level outflow, and modes of climate variability that shape TC intensity and track. We welcome interdisciplinary research employing observational analyses, reanalysis products, historical datasets, numerical simulations, climate model projections, remote sensing, and emerging data-driven approaches.

Guest Editors

Dr. Yijie Zhu

Department of Geosciences, Florida Atlantic University, Boca Raton, FL, USA

Dr. Yao Zhou

Applied Aviation Sciences Department, College of Aviation, Embry-Riddle Aeronautical University, Daytona Beach, FL, USA

Deadline for manuscript submissions

22 March 2027



Atmosphere

an Open Access Journal
by MDPI

Impact Factor 2.6
CiteScore 5.4



mdpi.com/si/272098

Atmosphere
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
atmosphere@mdpi.com

[mdpi.com/journal/
atmosphere](https://mdpi.com/journal/atmosphere)





Atmosphere

an Open Access Journal
by MDPI

Impact Factor 2.6
CiteScore 5.4



[mdpi.com/journal/
atmosphere](https://mdpi.com/journal/atmosphere)



About the Journal

Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

Editor-in-Chief

Dr. Daniele Contini

Institute of Atmospheric Sciences and Climate (ISAC), National Research Council (CNR), Str. Prv. Lecce-Monteroni km 1.2, 73100 Lecce, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Ei Compendex, GEOBASE, GeoRef, Inspec, CAPlus / SciFinder, Astrophysics Data System, and other databases.

Journal Rank:

CiteScore - Q2 (Environmental Science (miscellaneous))