## **Special Issue**

# Numerical Modeling Applications of Extreme Weather Events and Climate Change

## Message from the Guest Editors

Numerical models are essential tools for understanding the complex interactions between the atmosphere, land. and marine surfaces, offering vital insights into extreme events like storms, floods, heatwaves, and droughts. As the frequency and intensity of such events increase due to climate change, understanding their underlying physical mechanisms and predicting their development have become more important and challenging than ever. This Special Issue will focus on the application of numerical modeling to extreme weather events and their broader implications for climate change. We expect contributions to explore various types of models, ranging from global and regional climate models to high-resolution, process-based simulations. Topics might include advancements in model accuracy, uncertainty quantification, the role of coupled systems, and the integration of artificial intelligence and ensemble approaches to enhance model capabilities. The Special Issue is anticipated to demonstrate how these models not only improve forecasting but also assess climate change risks, inform policy, and guide adaptation strategies.

#### **Guest Editors**

Dr. Euripides N. Avgoustoglou

Hellenic National Meteorological Service, GR16777 Athens, Greece

Dr. Xiaofei Wu

Plateau Atmosphere and Environment Key Laboratory of Sichuan Province, School of Atmospheric Sciences, Chengdu University of Information Technology, Chengdu 610225, China

## Deadline for manuscript submissions

29 May 2026



an Open Access Journal by MDPI

Impact Factor 2.3 CiteScore 4.9



mdpi.com/si/233042

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

mdpi.com/journal/ atmosphere





an Open Access Journal by MDPI

Impact Factor 2.3 CiteScore 4.9



## **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))

