# Special Issue

# Mapping and Modelling Hydroclimate Extremes Using Remote Sensing and Advanced Geospatial Techniques

## Message from the Guest Editors

Hydroclimate extremes, particularly extreme floods, are increasing in frequency and intensity due to climate change and landscape alterations. These events pose major threats to lives, infrastructure, and ecosystems and call for robust methods to understand, monitor, and predict their impacts. This Special Issue invites original research and reviews focusing on mapping, modeling, and assessing extreme flood events, emphasizing integrating remote sensing, advanced geospatial analysis, and hydrological and hydrodynamic modeling techniques. We seek contributions that leverage satellite data (e.g., Sentinel, SWOT, MODIS), UAV-based observations, LiDAR, and SAR to detect, map, and quantify flood extents, water levels, and landscape responses. Studies employing data assimilation, AI/ML-based modeling, and coupling remote sensing with hydrodynamic simulations to enhance flood prediction and decision-making are highly encouraged. The Special Issue will foster cross-disciplinary research addressing challenges in flood risk mapping, early warning systems, and nature-based solutions.

## Guest Editors

Dr. Ben Jarihani

Dr. Beata Calka

Dr. Khalil Valizadeh Kamran

## Deadline for manuscript submissions

1 June 2026

**Atmosphere**

an Open Access Journal by MDPI

Impact Factor 2.3
CiteScore 4.9

mdpi.com/si/243443

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

mdpi.com/journal/atmosphere

# Atmosphere

an Open Access Journal by MDPI

Impact Factor 2.3
CiteScore 4.9

mdpi.com/journal/atmosphere

MDPI

# 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))