



## Hydroclimate in a Changing World: Recent Trends, Current Progress and Future Directions

Guest Editor:

**Dr. Haibo Liu**

Lamont-Doherty Earth  
Observatory, Columbia  
University, New York, NY 10960,  
USA

Deadline for manuscript  
submissions:

**closed (15 April 2023)**

### Message from the Guest Editor

Global warming is imposing tremendous challenges upon human lives and other life on Earth. A warmer atmosphere holds more moisture. The consensus is that the moisture transport by the atmospheric circulation strengthens and makes already wet areas of moisture convergence wetter and already dry areas of moisture divergence drier. Therefore, the tropics and mid to high latitudes will get wetter and the subtropics will get drier. Global warming will cause the interannual variability of the hydroclimate to intensify, which will induce more droughts and floods. Furthermore, the changing atmospheric circulation interaction with the land surface may cause the changing of storm tracks, and may play an important role in shaping the moisture redistribution.

This Special Issue serves as a convenient platform for the community to document and discuss the hydroclimate response of global warming. Topics include, but are not limited to:

- Recent and future hydroclimatic extremes;
- Hydroclimate dynamics;
- Hydroclimate variability;
- Food and water security under a changing climate;
- Drought and flood under a changing climate.



[mdpi.com/si/118960](https://mdpi.com/si/118960)

Dr. Haibo Liu  
*Guest Editor*

# Special Issue



an Open Access Journal by MDPI

## Editor-in-Chief

### **Prof. Dr. Ilias Kavouras**

Environmental, Occupational,  
and Geospatial Health Sciences,  
CUNY School of Public Health,  
New York, NY 10027, USA

## 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!

## 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)*)

## Contact Us

---

Atmosphere Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/atmosphere](https://mdpi.com/journal/atmosphere)  
[atmosphere@mdpi.com](mailto:atmosphere@mdpi.com)  
[X@Atmosphere\\_MDPI](https://twitter.com/Atmosphere_MDPI)