Special Issue

Advances in Hazardous Weather Prediction: Data Assimilation, Numerical Model and Tools

Message from the Guest Editors

Short-range (0–6 hour) weather forecasts have made significant progress recently for hazardous weather events including tornados, hails, flash flooding and damaging winds, etc. This is highly accredited to the advances in data assimilation (DA) algorithms and the application of radar/satellite observation data, the development with the convective-allowing models (CAMs), the utilization of high-performance computers, and the development of AI techniques. This Special Issue seeks submissions on the following topics that are related to the improvement of forecasts, warnings and decision support for high-impact thunderstorm events:

- CAM development and application;
- DA algorithms and application for new observation datasets;
- high-performance computing in DA and CAMs;
- applications of machine learning and AI techniques for hazardous event prediction;
- development in verification method and data for hazardous events;
- applications of other computing techniques for hazardous weather systems, such as workflow development, software management, etc.

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Deadline for manuscript submissions

closed (15 July 2022)

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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

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