



Numerical Modeling and Statistical Analysis of Severe Weather Conditions and Extreme Events

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Message from the Guest Editors

This Special Issue aims to collect state-of-the-art contributions on interdisciplinary applications of mesoscale numerical weather prediction (NWP) models for the study of atmospheric physical processes related to severe weather conditions and extreme events. A wide range of weather-related topics and techniques are welcome. Possible topics include but are not limited to: heavy precipitation systems and triggering mechanisms, floods, landslides, supercell thunderstorms, windstorms, tornados and downbursts, convection initiation, mesoscale convective systems, statistical analysis, model verification and performance, impact of data assimilation techniques on the model performance at different forecast ranges, model sensitivity tests, etc.

Studies based on coupled modeling systems are considered very useful, due to the important role of the mesoscale NWP models in driving (or being coupled to) other Earth-science-related numerical tools, such as modeling systems devoted to oceanography, hydrology, air quality, regional climate, etc.





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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!

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