



Advances in Mesoscale Numerical Weather Prediction and its Applications

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Message from the Guest Editors

This Special Issue aims to shed new light on interdisciplinary applications of mesoscale NWP to reveal weather-related physical processes as well as to mitigate the consequences of high-impact weather events. Therefore, this Special Issue intends to collect contributions that report advancements and the current state of the mesoscale NWP models, including forecast skill improvements, the impact of physical parameterizations on forecasts, the validation and intercomparison of forecasts, as well as applications of data assimilation techniques and nowcasting methods. Furthermore, this Special Issue welcomes numerical experiments and case studies regarding strategies designed to couple mesoscale NWP models with hydrological, ocean, wave, and chemical models to improve our understanding of the mesoscale physical and dynamical processes that can trigger natural hazards. Methodological approaches and applications exploiting this knowledge to advance analyses and forecasts as well as to make them tailored for the design and refinement of early warning systems and decision support services are of particular interest.





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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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