



Research on Tropical Cyclone: Formation and Implications

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Message from the Guest Editors

Tropical cyclones (TCs) typically cause extreme rainfall and flooding and plague coastal communities around the world. Significant efforts are being undertaken at operational and research facilities to improve the understanding and prediction of TC track, intensity, structure, and associated impacts, in particular from wind, surge, rainfall, and severe weather. They are difficult to model because of the wide range of spatiotemporal scales involved in their development and lifecycles. Despite many worthy observational and numerical modeling studies in recent decades, the detailed physical processes associated with TC formation are still inadequate. In this Special Issue, we invite original articles that use advanced data analysis techniques and numerical modeling techniques for the formation and implications of TCs, mainly on the mechanism of multiscale circulation interaction, oscillations and sudden changes of tracks, intensity, and structure variation during the generation of tropical cyclones. We hope that these articles will propose a synthesis of new observations and new concepts on how tropical cyclone formation occurs and reveal the effects and implication of TCs.





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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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