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Tropical Cyclones: Observations and Prediction

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Deadline for manuscript submissions:
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Message from the Guest Editors

Tropical cyclones (TCs), which develop over warm tropical oceans, are among the most destructive natural phenomena. Therefore, the forecasting of TCs has been an area of active scientific research for decades. However, the prediction of TCs remains difficult in the fields of research and operational forecasting because the mechanism of TCs is not fully understood. One of the reasons is that high-quality observation data have not been fully analyzed. In particular, in air–sea fluxes, severe convection around the eyewall plays an important role in TC intensification, which should be attributed to TC dynamics. Therefore, observational and numerical research on TC dynamics is crucial for TC forecasting.

Topics of interest for this Special Issue include:

(1) New developments in observation and modelling; (2) new developments in theory and forecasting; (3) air–sea interactions and cloud microphysics in TCs; (4) variation in TC tracking; (5) tropical cyclogenesis; (6) life cycle of TCs; (7) substructure and asymmetry of the eyewall; (8) rainbands and eyewall preplacement.

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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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