



Advanced Climate Simulation and Observation

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Message from the Guest Editors

Global climate changes, particularly extreme events, directly or indirectly affect terrestrial carbon, water, and energy exchanges between the atmosphere, biosphere, and lithosphere, thus controlling freshwater availability, food production, disease outbreaks, floods and droughts. It is necessary to develop advanced climate simulation and observation, especially in relation to extreme climate events. Advanced climate simulation and observation can improve accurate prediction of climate change and long-term trends which can mitigate the impacts of climate on social economy development and human lives.

This Special Issue aims to introduce advanced approaches in climate simulation and observation, to various practical studies related to climate variations. This includes the multidisciplinary exercise of global climate models (GCMs) and regional climate models (RCMs), remote sensing and radar monitors, mitigation studies of high-impact extreme climate events, future predictions of global and regional climate variations using GCMs, RCMs, some new artificial intelligence, such as artificial neural networks, random forest, and support vector machines.





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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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