Special Issue

Challenges in Weather and Climate Modelling: Model Development, Validation, and Perspectives

Message from the Guest Editors

This Special Issue welcomes submissions on the following topics:

- The characteristics (e.g., numerical schemes, effective resolution, etc.) of the modeling system that make them suitable for a fifty-hour simulation versus a fifty-year simulation.
- The implications of a climate modeling system not capturing the morning minimum and afternoon maximum temperatures within the boundary layer.
- The possibility or otherwise (including the implications) of a climate modeling system obtaining a reasonable monthly mean while failing to simulate the diurnal cycle.
- The rules and evaluation criteria for NWP and climate modeling systems from both model development and model output perspectives.
- The implications of the characteristics (e.g., numerical schemes, effective resolution, etc.) of weather and climate modeling systems on impact models that use the meteorological output as input.
- Convection-permitting models and ensembles.
- The role (including strengths and weaknesses) of AI and ML approaches in generating weather and climate information particularly, at the community or sub-national scale.

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About the Journal

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!

Editor-in-Chief

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