Special Issue

Deep Learning Algorithms for Weather Forecasting and Climate Prediction

Message from the Guest Editor

Human society and natural ecosystems are vulnerable to weather and climate change. Therefore, there is an urgent need for useful and credible information for weather and climate services. In recent years, deep learning is widely used in meteorological research and have made great progress in tasks such as weather forecasting and climate prediction. However, deep learning still has two problems: the first is the poor generalization ability of models, which often underestimate or even miss extreme events, and the second is the lack of physical consistency, weak interpretability, and poor credibility of "black box" models. This Special Issue aims to promote the publication of original research and reviews that focus on deep learning algorithms for weather forecasting and climate prediction. Submissions are welcome covering a wide range of topics, including, but not limited to:

- the application of deep learning in climate prediction and weather forecasting;
- the comparison of different methods to illustrate the effectiveness of deep learning;
- the interpretation of the models and results.

Guest Editor

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Deadline for manuscript submissions

closed (16 December 2024)

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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!

Editor-in-Chief

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