

Special Issue

Advanced Numerical Modeling Techniques in Meteorology: Exploring the Frontier of Weather Prediction and Data Assimilation

Message from the Guest Editors

The field of meteorology is undergoing a transformative phase, driven by revolutionary breakthroughs in the application of artificial intelligence (AI), advancements in numerical modeling techniques, and the burgeoning potential of quantum computing. This Special Issue of *Atmosphere* aims to provide a comprehensive overview of these cutting-edge methodologies, offering insights into their applications, challenges, and prospects. The intersection of advanced numerical modeling techniques, hybridization of AI-integrated physics models, and quantum computing heralds a new era in meteorology. By embracing these innovative approaches, meteorologists can enhance the accuracy of weather predictions, improve data assimilation processes, and tackle previously insurmountable challenges. This Special Issue of *Atmosphere* aims to foster collaboration, stimulate discussion, and inspire further research in these groundbreaking areas. We invite contributions from researchers, practitioners, and experts to share their insights, findings, and visions for the future of meteorological science. If you are interested, please scan the QR code or click the link after the code for more specific details.

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