Special Issue

Data Assimilation Development: Theory, Algorithm, and Applications in Meteorology

Message from the Guest Editors

Used to assimilate observational information into dynamical systems, data assimilation has many successful applications in atmospheric science and oceanic science, while also being utilized in many other fields. With the continuous development of a new generation of meteorological satellite- and ground-based remote sensing data, the development of data assimilation directly affects its applicational benefits in various fields, especially in extreme weather prediction. With much challenging research on the theories, algorithms, and meteorology applications of data assimilation, this Special Issue aims to cover the advancing studies in this field. Original studies, from pure theories to algorithm improvements, from assimilating satellite data to coupling data assimilation with machine learning, from Kalman filters with non-Gaussian noise to estimating error covariance via non-ensemble methods, from the combination between sequential assimilation and variational assimilation to data fusion with assimilation techniques, and so on, are all welcome contributions.

Guest Editors

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Dr. Yan-An Liu

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Deadline for manuscript submissions

closed (15 August 2023)

Atmosphere

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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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