Special Issue

Remote Sensing-Driven Advances from Mesoscale to Convective-Scale Predictions: Process Modelling, Observations, Data Assimilation and Machine Learning

Message from the Guest Editors

The availability of more remote sensing datasets could provide the potential for deep insights into underlying MCSs. Therefore, this Special Issue aims to deepen our understanding of MCSs, from the aspects of modelling, observations, assimilation, and machine learning, drawing on satellite and radar data in particular. We welcome the submission of original research, review articles, and MCS case studies utilizing remote sensing observations, AI technologies, and other advanced methodologies. By integrating multidisciplinary research findings, this Special Issue aims to deepen understanding of the mechanisms driving the evolution of MCSs, while also developing new forecasting skills. Topics of interest for this Special Issue include, but are not limited to, the following:

- Routine observations (from remote sensing platforms, such as radars and satellites) and targeted field campaigns;
- Analysis related to the formation and evolution of MCSs;
- Assimilating or integrating new datasets into numerical models;
- Development of sophisticated methods for modelling output;
- Utilization of AI (Artificial Intelligence) technology for MCS forecasting.

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Remote Sensing

an Open Access Journal by MDPI

Impact Factor 4.1
CiteScore 8.6

mdpi.com/si/255561

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Message from the Editor-in-Chief

Remote Sensing is now a prominent international journal of repute in the world of remote sensing and spatial sciences, as a pioneer and pathfinder in open access format. It has highly accomplished global remote sensing scientists on the editorial board and a dedicated team of associate editors. The journal emphasizes quality and novelty and has a rigorous peer-review process. It is now one of the top remote sensing journals with a significant Impact Factor, and a goal to become the best journal in remote sensing in the coming years. I strongly recommend *Remote Sensing* for your best research publications for a fast dissemination of your research.

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