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Machine Learning Approaches for Assessing Vegetation Phenology under Climate Change

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Message from the Guest Editors

We are in the era of climate change, and global warming and irregular precipitation have profoundly influenced vegetation phenology and crop growth, subsequently affecting the carbon balance.

The purpose of this Special Issue is to present new research advances on the applications of remote sensing techniques, such as multi/hyperspectral satellites and UAVs, for monitoring the changes in vegetation phenology under the changing climate. Contributions focusing on new methods and applications in vegetation phenology extraction; the assessment of climate change impacts on vegetation phenology, in particular, new approaches and novel contributions using machine learning; and deep learning methods, specifically studies based on multispectral and hyperspectral from multiple platforms, are welcome. The scope of this Special Issue includes, but is not limited to, the following:

- Vegetation phenology extraction using multi- and hyperspectral images;
- Mapping vegetation phenology;
- Vegetation growth monitoring;
- Time-series analysis monitoring of agriculture and forest;
- High-throughput phenomics;
- Machine learning and deep learning.

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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!

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