

Special Issue

Remote Sensing Diagnosis and Intelligent Decision-Making for Water and Nitrogen Physiology of Crops

Message from the Guest Editors

The efficient management of water and nitrogen remains a cornerstone challenge in modern agriculture, directly impacting crop yield, quality, and ecological sustainability. Traditional field-based diagnostic methods often fall short in capturing the spatial and temporal variability of crop physiological responses; however, recent advances in remote sensing technologies—coupled with intelligent decision-making frameworks such as machine learning, data assimilation, and physiological modeling—are revolutionizing our ability to monitor, interpret, and manage crop water and nitrogen dynamics at multiple scales. This Special Issue aims to showcase cutting-edge research at the intersection of agronomy, remote sensing, and artificial intelligence. Areas of interest include the following topics:

- Remote sensing indicators for crop water and nitrogen diagnosis;
- AI-driven models for decision support and precision interventions;
- Multiscale data fusion from UAVs, satellites, and in-field sensors;
- The mechanistic modeling of crop–soil–environment interactions.

We invite studies that advance both scientific understanding and practical implementation of intelligent crop input management.

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Editor-in-Chief

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