Special Issue

UAV Remote Sensing, Precision Agronomy, and Resource Optimization Strategies

Message from the Guest Editors

This Special Issue focuses on integrating remote sensing inversion, machine learning, and AI to monitor crop stress (e.g., pests, drought) and growth in staple crops like soybean and rice using UAV, satellite, and IoT technologies, while developing data-driven models to optimize sowing, fertilization, and irrigation for resource efficiency. It also explores multi-scale modeling and disaster early-warning systems by merging physics-based and data-driven approaches to analyze yield variability, assess climate risks (e.g., heatwaves), and support agricultural policies. The issue seeks original research on crop parameter retrieval, AI-powered precision management, multimodal pest detection, and climate-adaptive strategies to bridge theoretical innovation and practical applications in intelligent agriculture. Topics of interest include, but are not limited to, the following:

- UAV/satellite-based retrieval of crop biophysical parameters;
- Early diagnosis of crop stresses;
- AI-driven precision fertilization and irrigation decision systems;
- Agroecosystem dynamic monitoring;
- Agricultural adaptation strategies;
- Crop growth modeling and yield prediction;
- Crop phenotyping analysis;

Guest Editors

Prof. Dr. Le Xu

College of Agriculture, Northeast Agricultural University, Harbin 150030, China

Prof. Dr. Shen Yuan

National Key Laboratory of Crop Genetic Improvement, Hubei Hongshan Laboratory, MARA Key Laboratory of Crop Ecophysiology and Farming System in the Middle Reaches of the Yangtze River, College of Plant Science and Technology, Huazhong Agricultural University, Wuhan 430070, China

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Sustainability
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
sustainability@mdpi.com

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Prof. Dr. Marc A. Rosen
Faculty of Engineering and Applied Science, University of Ontario Institute of Technology, Oshawa, ON L1G 0C5, Canada

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