Special Issue

Artificial Intelligence for Soil Erosion Prediction and Modeling

Message from the Guest Editors

Soil erosion is one of the most pressing environmental challenges of the 21st century, contributing to the degradation of arable land, loss of biodiversity, and increased sedimentation in water bodies. Driven mostly by natural forces, such as rainfall and wind, as well as by anthropogenic activities including deforestation, agriculture, and urbanization, soil erosion threatens the global Water-Energy-Food-Ecosystem Nexus and sustainable development. Traditional methods for predicting, monitoring, and controlling soil erosion often struggle to capture the complexity and variability of erosion processes across different scales and regions. At the same time, artificial intelligence (AI) has emerged as a powerful tool that can enhance our ability to understand and manage soil erosion, providing new insights into the factors driving erosion. This Special Issue focuses on the application of AI in soil erosion research and management, covering all research where Al is integrated into soil erosion modeling.

Guest Editors

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Deadline for manuscript submissions 3 April 2025



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Impact Factor 3.2 CiteScore 4.9



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