



atmosphere



Special Issue Reprint

Drought Monitoring, Prediction and Impacts

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Climate change continues to cause unprecedented shifts in the global water cycle, leading to an increase in the frequency and severity of droughts across various regions. These extended dry periods disrupt ecosystems, reduce agricultural productivity, and challenge the resilience of societies that rely on stable water and food supplies. Recent events have shown how drought results in food insecurity, economic losses, and environmental damage, emphasizing the need for better monitoring and prediction tools. This reprint highlights the understanding of the complex nature of drought dynamics in a changing climate. Contributions focus on combining machine learning, remote sensing, climate simulations, and data-driven approaches to enhance drought monitoring, simulation, and prediction. The collected contributions improve methods for strengthening drought early warning systems, enhancing adaptive water and land management, and guiding mitigation measures from local to global levels. Through an interdisciplinary approach, this reprint underscores the hydrological, ecological, and agricultural impacts of drought; explores strategies for managing uncertainty and risk; and suggests innovative ways to build resilience. Together, these studies demonstrate the global scientific effort to boost predictive capabilities and support sustainable solutions for the complex challenges of drought in a changing climate.



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