Technologies for Forecasting Volcanic Hazards: From Remote Sensing to Modeling

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Deadline for manuscript submissions:
26 October 2024

Message from the Guest Editors

Forecasting volcanic hazards presents extraordinarily challenging problems. However, there is significant progress in forecasting volcanic hazards and, in specific circumstances, in making predictions. Improvements in forecasting are closely related to a wealth of data from enhanced monitoring techniques, such as satellite observations, and tremendous advances in computing power, leading to the increased use of data-driven approaches, including artificial intelligence (AI) techniques, to solve problems of volcanic hazards. Looking to the future, AI models can be combined with physical constraints to bridge the gap between data-driven methods and physical modeling and to increase the interpretability of AI predictions, offering an alternative path to deal with the strongly nonlinear and time-dependent character of volcanic phenomena.

This Special Issue invites contributions (original research articles and reviews are welcome) on the improvement of traditional ground-based volcano monitoring systems with technological innovation from satellite remote sensing, and of computational methods, blending deep-learning, data-driven approaches, and physics-based simulations.

mdpi.com/si/176845

Special Issue

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Message from the Editor-in-Chief

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