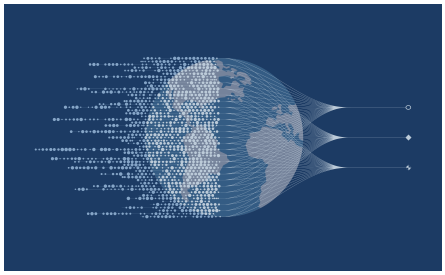

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# Detection of Volcanic Activities at the International Data Centre

Volcanic eruptions generate infrasound, which consists of low-frequency acoustic waves below 20 Hz. This phenomenon is valuable for monitoring volcanic activity, particularly in regions where local sensor networks are impractical. The expansion of infrasound stations of the International Monitoring System (IMS), along with advancements in infrasound data analysis, has improved the detection of volcanic events. This study presents the results from infrasound data analysis and event reviews conducted at the International Data Centre (IDC), focusing on the detection of volcanic activity across various regions and highlights significant eruptions such as the Shiveluch volcano eruption in November 2024. We discuss the integration of infrasound data with other CTBTO monitoring technologies, such as seismic networks, which could enhance the ability to characterize eruptions and assess their intensity. Additionally, we address the challenges in analyzing and interpreting long-duration infrasound signals, often obscured by background noise from environmental sources like wind and ocean waves.
This work underscores the potential of IMS infrasound networks and IDC data analysis to detect volcanic eruptions on a global scale, providing critical insights into eruption dynamics and supporting efforts to improve volcanic hazard monitoring and mitigation.

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