

Developing a Reliable Infrasound Early Warning System for Indonesia: Integrating Scattering Methods and Seismic Data

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Indonesia, particularly prone to natural disasters like volcanic eruptions, tsunamis, landslide and earthquakes, requires a reliable early warning system.

This study introduces a new approach to develop an Infrasound Early Warning System (IEWS) for Indonesia by utilizing the scattering method and highlighting the essential need to have operational infrasound stations in Indonesia.

In 2004, with the support of DASE (French CEA), BMKG established an experimental infrasound station in Palangkaraya, Kalimantan. Unfortunately, this station is no longer operational, necessitating reliance on IMS - infrasound stations in neighboring countries, such as I06AU, to gather data and detect local events in real time.

This study integrates infrasound data with seismic data to improve the detection of low-frequency signals associated with events such as volcanic eruptions and earthquakes. Furthermore, it optimizes the strategic placement of infrasound stations in Indonesia; to enhance signal capture and minimize noise interference, providing comprehensive recommendations for station design and equipment.

In conclusion, this paper highlights the essential need to establish infrasound stations in Indonesia to improve monitoring capabilities.

The development of an early warning system that utilizes the scattering method and integrates infrasound and seismic data provides a strong solution for improving disaster preparedness and response efforts.

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