

technology in Indonesia: 2015 Eventful year review

Infrasound technology has been developing rapidly in the last 15 years and is now reaching a level of maturity that justifies deploying infrasound stations for monitoring geophysical phenomena. Infrasound stations are being deployed worldwide, for both scientific and societal applications. BMKG and CEA have extended their collaboration to set-up experimental infrasound stations across the Indonesian Archipelago. One station is located in Pelabuhan Ratu, West-Java. Although this array is located in a noisy infrasound background and its small aperture makes it very sensitive to local sources, the experiment provides useful information. On a long time scale, data are collected, and processed using adapted correlation-based methods in order to detect coherent signals in the background noise. Data processing focuses on one full year of measurements and are compared with products provided by the International Monitoring System (IMS) or by geophysics institutes like BMKG for earthquakes or the Smithsonian Institution for volcanic eruptions. We demonstrate the potential of such an experimental station by placing greater emphasis on several successful and significant infrasound detections of the year 2015. In that context, infrasound data, coupled with conventional measurements, help characterizing and quantifying acoustic sources. Of specific interest is the characterization of seismo-acoustic events using infrasound. Such long-range monitoring may help to prevent eruption disasters, mitigate ash clouds with strong implication for aviation hazard, the monitoring of large earthquakes or atmosphere dynamic parameters.

Primary author: SWASTIKARANI AGNES, Rika (NDC Meteorology Climatology and Geophysics Agency (BMKG))

Presenter: SWASTIKARANI AGNES, Rika (NDC Meteorology Climatology and Geophysics Agency (BMKG))

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