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monitoring volcanic eruptions using IMS infrasound data

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The European Research Infrastructure project ARISE demonstrated that infrasound is an efficient method for remote volcano monitoring up to distances of several thousand kilometers. Near field infrasound observations can be used to reconstruct in detail the eruptive chronology and to provide near-real time notification of ongoing activity to civil protection authorities. At larger distances recent work showed that infrasound parameters could constraint the source strength and eruptive chronology. Such parameters are useful to model the ash plume dispersion which is strongly controlled by source term information that is often missing, especially for volcanic eruptions from poorly instrumented volcanoes. ARISE project perspective is to cover this gap, providing near-real time information on the source terms to the Volcanic Ash Advisory Centre (VAAC). The prototype system Volcanic Information System (VIS) was recently integrated in the virtual Data Exploitation Centre (vDEC) of CTBTO and first tested using remote infrasound observations from Etna. In order to consolidate the notifications, confidence levels are calculated using accurate atmosphere specifications. Once validated, VIS is planned to further be evaluated by considering other regions worldwide.

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