, regional, and remote seismo-acoustic observations of the April 2015 VEI 4 eruption of Calbuco volcano, Chile

We are developing methodologies for automated remote detection, location, and source characterization of volcanic infrasound. The two major sub-plinian explosive phases of the 22–23 April 2015 VEI 4 eruption of Calbuco volcano, Chile produced powerful infrasound. The eruption was recorded on regional seismo-acoustic stations out to 1,540 km and on 5 stations (IS02, IS08, IS09, IS27, and IS49) of the International Monitoring System (IMS) infrasound network at distances from 1,525 km to 5,122 km. The remote IMS infrasound arrays provide an accurate explosion chronology consistent with the regional and local seismo-acoustic data. This case study highlights the significant capability of the IMS infrasound network to provide automated detection, location, characterization, and timing estimates of global explosive volcanic activity. Augmenting the IMS with regional seismo-acoustic networks will dramatically enhance signal detection, latency, and discrimination capability.

Primary author: MATOZA, Robin Samuel (University of California, Santa Barbara, CA, United States)

Presenter: MATOZA, Robin Samuel (University of California, Santa Barbara, CA, United States)

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