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, medium and long-range infrasound observations of Etna volcano, Italy.

Volcanoes are efficient sources of infrasonic waves that can travel large distances (>1000 km) in atmospheric waveguides with very limited amplitude loss. In favourable propagation conditions, long-range infrasound well tracked the occurrence and the duration of volcanic eruptions: yet, the potential of infrasound technology to infer the fine details of the volcanic eruptive source is still under debate. We compare short, medium and long-range infrasound observations of eruptive activity at Etna volcano as recorded by infrasound arrays deployed at local (~5 km), regional (~630 km) and larger distances (IMS CTBT Infrasound Network) from the source. Activity at Etna volcano increased since 2011, with more than 50 lava fountains episodes until May 2016, able to produce 1-2 km high sustained lava columns and feeding ash column reaching heights of more than 10 km. Local, regional and far-field infrasonic features are investigated and compared with available information on the plume height. The potential of near real-time notification of ongoing volcanic activity at Etna volcano is discussed. This work is performed in the framework of the EU H2020 ARISE2 project (2015-2018) and in the framework of the vDEC collaboration established with the Provisional Technical Secretariat of the Comprehensive Nuclear-Test-Ban Treaty Organization.

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