



Long-range infrasound monitoring of eruptive volcanoes.

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The efficient long-range propagation in the atmosphere makes infrasound of active volcanoes extremely promising and opens new perspectives for volcano monitoring at large scale. In favourable propagation conditions, long-range infrasound observations can be used to track the occurrence and the duration of volcanic eruptions also at remote non-monitored volcanoes, but its potential to infer volcanic eruptive source term is still debated.

We present results of comparing five years of infrasound of eruptive activity at Mt.Etna volcano (Italy) recorded both at local (~ 5 km) and at regional distances (~ 600 km) from the source. Infrasound of lava fountains at Etna volcano, occurring in between 2010 and 2015, are analysed in terms of the local and regional wavefield record, and by comparing to all available volcanic source terms (i.e. plume height and mass eruption rates).

Besides, the potential of near real-time notification of ongoing volcanic activity at Etna volcano at a regional scale is investigated. In particular we show how long range infrasound, in the case of Etna volcano, can be used to promptly deliver eruption notification and reliability is constrained by the results of the local array.

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