

T1.1-P22. Volcano infrasound monitoring including propagation effects induced by topography and atmosphere

Infrasound monitoring of active volcanoes provides direct evidence of the injection of volcanic material into the atmosphere. From local to regional distances, infrasound is now used routinely for volcano monitoring whereas volcanic source parameters are commonly derived from direct observations on the field. In this work we compare field observations, with results of numerical simulations using FDTD modelling including topography and atmosphere to show how both effects have to be accounted to improve real time infrasound volcano monitoring. The topographic effect is more significant in near-source (less than 10 km) while the atmospheric structure has a strong effect at the regional distances (>100-1000 kilometers). We show data collected at regional scale (145-230 km) produced by a giant landslide in Askja Volcano (Iceland) and at local scale (3-60 km) by vulcanian activity of Sakurajima volcano (Japan) to demonstrate that the atmospheric profile and topography need to be consider to derive reliable infrasonic source parameters.

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