

# of the Form of Pressure Signal from Tonga Volcano with Increasing Distance from it

Wednesday, 21 June 2023 15:10 (15 minutes)

A propagation model for atmospheric pressure signal generated by the eruption of the Hunga-Tonga-Hunga-Ha'apai volcano (hereafter abbreviated as Tonga) is proposed. The model is used to explain the changes in the wave form of the observed signal with increasing distance from the volcano. The model is based on the solution of the linearized Korteweg de Vries (KDV) equation, which describes the change in the wave form of the Lamb wave as a function of distance from the source. The model signals are obtained as a superposition of the Lamb wave and the acoustic modes calculated by parabolic equation method for three infrasound stations (IS22, IS24, and IS30). These signals are compared with the observed signals. The energy of the volcanic eruption is estimated from the pressure amplitude and characteristic duration of the signal. This work is supported by RSF grant N 21-17-00021.

## Promotional text

The objective is to model signal propagation from Tonga.

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## Oral preference format

in-person

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**Session Classification:** O1.4 Multidisciplinary Studies of the Earth's Subsystems

**Track Classification:** Theme 1. The Earth as a Complex System: T1.4 Multi-Discipline Studies of the Earth's Subsystems