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Balloon Observations of Infrasound Waves from the 15 January 2022 Hunga Eruption, Tonga

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The 15 January 2022 eruption of the Hunga volcano (Tonga) generated a rich spectrum of waves, some of which achieved global propagation. Among numerous platforms monitoring the event, two stratospheric balloons flying over the tropical Pacific provided unique observations of infrasonic wave arrivals, detecting five complete revolutions. Combined with ground measurements from the infrasound network of the International Monitoring System, balloon-borne observations may provide additional constraint on the scenario of the eruption, as suggested by the correlation between bursts of acoustic wave emission and peaks of maximum volcanic plume top height. Balloon records also highlight previously unobserved long range propagation of infrasound modes and their dispersion patterns. A comparison between ground and balloon based measurements emphasizes superior signal to noise ratios onboard the balloons and further demonstrates their potential for infrasound studies.

E-mail

christophe.millet@cea.fr

Promotional text

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Oral preference format

Primary author: Dr PODGLAJEN, Aurélien (LMD, PSL Research Institute)

Co-authors: HERTZOG, Albert (LMD, PSL Research Institute); Mr LE PICHON, Alexis (Commissariat à l'énergie atomique et aux énergies alternatives (CEA)); MILLET, Christophe (Commissariat à l'énergie atomique et aux énergies alternatives (CEA)); BEDKA, Christopher (LaRC - NASA Langley Research Center); KHLOPENKOV, Konstantin (SSAI - Science Systems and Applications, Inc.); Prof. GARCIA, Raphaël (ISAE-SUPAERO); KHAYKIN, Sergey (STRATO - LATMOS); Dr GÉRIER, Solène (ISAE-SUPAERO)

Presenter: MILLET, Christophe (Commissariat à l'énergie atomique et aux énergies alternatives (CEA))

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