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UNIVERSITÄT BERN

Seminar über Microwave Physics and Atmospheric Physics

Referent/in: Dr Neil Hindley Centre for Space, Atmospheric and Oceanic Science, University of Bath, UK

Titel: Surface-to-Space Observations of Ultra-Fast Atmospheric Waves from the Hunga-Tonga Hunga Ha'apai Volcanic Eruption

On 15th January 2022, a major volcanic eruption occurred between the islands of Hunga Tonga and Hunga Ha'apai (175.4W, 20.5S). Located under only a shallow depth of water, this submarine volcano launched an explosive plume of ash and flash-boiled water up through the ocean upwards into the atmosphere, with an explosive energy comparable to Krakatau in 1883. The explosion generated global-scale atmospheric waves that were detectable from the surface to the edge of space. This single event also sent shockwaves through the global research community, launching many thousands of scientific studies. In this seminar, I will discuss the ultra-fast stratospheric gravity waves generated by the initial explosion that propagated over the entire Pacific region and beyond, as detected by satellite and ground based remote sensing. I will present observations and analysis of not only the rarely-observed atmospheric Lamb wave travelling near the sound speed, but also the fastest gravity wave packets ever observed by satellite travelling at more than 275 m/s, with an apparent vertical depth greater than the depth of the atmosphere. I will show the global reach of these waves and their propagation and detection throughout all atmospheric layers from the surface to the edge of space. This event triggered atmospheric waves with speeds, scales and extents that are unprecedented in nearly 20 years of satellite observations, and will likely keep researchers busy for many years to come as we seek to understand the atmospheric response to this unique eruption.

Zeit: Montag, 06. Februar 2023, 14:00 Uhr

Ort: Room A97, Sidlerstrasse 5, 3012 Bern
https://unibe-ch.zoom.us/j/97081325603?pwd=d0ozME5xOS9pQVNxallLem81VHQyZz09
Meeting ID: 970 8132 5603
Passcode: iapmw