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Long Term IMS Infrasound Measurements as a Passive Probe for Climate Change

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The atmosphere is changing on a wide variety of timescales. The infrasound component of the International Monitoring System (IMS) can sense such changes, each second over periods of tens of years. Such long term measurements of atmospheric variability enable the study of climate change. Infrasonic waves passively probe the entire atmosphere. The challenge is to unravel temperature variability (long term increases and decreases) from surface based recordings. As a reference, seismic signals are used which remain unchanged as a function of time. A so-called seismoacoustic analysis uses both seismic and infrasonic signals, where changes in the recordings can be attributed to changes in the medium. The latter being temperature changes in the troposphere and stratosphere.
To illustrate the contribution of the IMS to climate studies, over 15 years of IMS seismic and infrasonic recordings will be shown. The seismoacoustic analysis performed with the recordings reveals long term changes in atmospheric temperature. Simultaneously a temperature increase in the troposphere and decrease in the stratosphere can be passively sensed.

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Promotional text

Long term International Monitoring System infrasound measurements as a passive probe for climate change.

Oral preference format

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