



## **Seasonal variability of mountain-associated wave and gravity wave detections by the IMS infrasound network**

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As part of the International Monitoring System (IMS), 49 infrasound stations globally probe the atmosphere for detecting violations of the compliance with the Comprehensive Nuclear-Test-Ban Treaty (CTBT). Due to the uniform station distribution, the IMS infrasound network is highly suitable for deriving global information on atmospheric dynamics' features, e.g. mountain-associated waves (MAWs) and gravity waves (GWs). Each station provides data for up to 17 years.

MAWs in the frequency range between approximately 0.01 Hz and 0.05 Hz can be detected by applying the Progressive Multi-Channel Correlation (PMCC) algorithm on infrasound data. As a result of triangulation of pertinent detections at individual stations, global hotspots of MAWs can be identified. Moreover, the PMCC algorithm allows for identifying short-period GWs as well, i.e. between about 5 min and up to 3 h.

As shown in a former contribution, satellite observations of GWs indicate that global hotspots are similar to those found for MAWs using IMS infrasound data. Here, we discuss the temporal variations of both MAW and GW detections regarding the question whether a conclusion on the correlation of both phenomena is possible. Characteristic features of seasonal and daily variations also enable a first approach in determining the GW sources.