



## **Geospatial analysis of IMS infrasound records related to announced spaceflight activity**

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Infrasound is one of International Monitoring System (IMS) technologies used to detect explosions which originate in the atmosphere. Many infrasound events are caused by moving objects like fireballs or supersonic speed anthropogenic sources.

Rocket launches belong to anthropogenic atmospheric sources of infrasound signals generated by events taking place along flight trajectory, such as lift-off or stage re-entries. Under favourable weather conditions these signals can propagate thousands of kilometres until they arrive at infrasound stations. Information about vehicle launch time, place and its trajectory may often be found in open source materials.

This study presents geospatial analysis of infrasound data related to announced spaceflight activity recorded at the IMS infrasound network. Analysis of signals detected at both regional and large distances is a complicated task considering a relatively small number of recording stations and changes in propagation and detection conditions.

The aim of this study is to explore the possibility of identification of spaceflight stages by examining signal appearance and comparing event location with open source information. Results of this study may facilitate analysis of signals generated by these complex infrasound sources.