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Signatures of 1001 Rocket Launches for Space Missions

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In the present study we analyze infrasound signatures of 1001 rocket launches for space missions recorded at stations of the International Monitoring System between 2009 and mid-2020. We include all surface- or ocean-based launches within this period with known launch time, location, rocket type, and mission name; whereas launches of sounding rockets and ballistic missiles for scientific and military purposes, respectively, are excluded from our study. We characterize the infrasonic signatures of over 70 different types of rockets launched at 27 different globally distributed spaceports to estimate the general detectability of rocket infrasound, to evaluate the individual station performance, to quantify propagation and attenuation effects and, finally, to derive a relation between rocket thrust and acoustic energy. Results from the infrasound analysis of the launches will be provided as a DOI referenced dataset for supporting future research on infrasound topics as well as on atmospheric dynamics.

Promotional text

Infrasonic signatures of 1001 rocket launches for space missions are analyzed to provide a DOI referenced dataset to support future research on infrasound topics as well as on atmosphere dynamics.

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