

Infrasonic Signals of Auroral Electro Arcs Detections at I37NO Station in 2020

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In the polar latitudes regions, both the Northern and Southern Hemispheres of the Earth, one of the natural phenomena observed periodically is the occurrence of auroral displays in the sky. Low frequency signals are generated with the production of the auroral electrojet arcs in the atmosphere which are sensitive to microbarometer sensors of the infrasound array network when the wind direction favours their propagation for detection. Such event detection though non-treaty relevant, is vital for assessing the capability of the array network for the verification regime. In 2020, the observed infrasound signal detection from the auroral occurrences in the atmosphere over Northern Norway was studied for their propagation parameters. The frequency content of the infrasound signals associated with these auroral electrojet arcs was <0.1 Hz, typical of this source. They showed pulsating infrasound signals with trace velocities <1 km/s. The signals observed, generally showed azimuths indicative of a direct line of source overhead in the atmosphere.

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