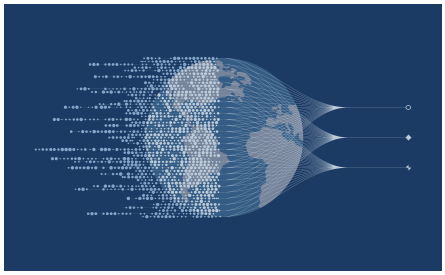

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Signals Detected of Auroral Electrojet Arcs in 2020 by Infrasound Stations along the Arctic Circle Region

The natural phenomena, auroral electrojet arcs displays is observed periodically as the displays of bright lights in the sky in the polar latitudes regions, for both the Northern and Southern Hemispheres of the Earth. The auroral electrojet arcs display generate low frequency acoustic signals in the process which are sensitive to the sensors of the infrasound array network under favourable wind conditions for their propagation for detection. Three International Monitoring Systems infrasound stations (I18DK, I37NO and I3US) along the Arctic Circle region detected these infrasound signals from the auroral display in 2020. These infrasound signals were observed to be detected occasionally during certain periods of the year. Studying the propagation and detection parameters of these low frequency signals associated with the auroral, the frequency content of <0.1 Hz typically observed of this source with a pulsating infrasound signals with trace velocities <1 km/s. Preliminary studies showed a wide range of azimuths of detection for the source(s), indicative of a randomly moving source(s) in the atmosphere.

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