

Abstract Submitted
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Acoustic

Localization

with Infrasonic Signals ARNESHA THREATT, BRIAN ELBING, Oklahoma State University — Numerous geophysical and anthropogenic events emit infrasonic frequencies (<20 Hz), including volcanoes, hurricanes, wind turbines and tornadoes. These sounds, which cannot be heard by the human ear, can be detected from large distances (in excess of 100 miles) due to low frequency acoustic signals having a very low decay rate in the atmosphere. Thus infrasound could be used for long-range, passive monitoring and detection of these events. An array of microphones separated by known distances can be used to locate a given source, which is known as acoustic localization. However, acoustic localization with infrasound is particularly challenging due to contamination from other signals, sensitivity to wind noise and producing a trusted source for system development. The objective of the current work is to create an infrasonic source using a propane torch wand or a subwoofer and locate the source using multiple infrasonic microphones. This presentation will present preliminary results from various microphone configurations used to locate the source.

Brian Elbing
Oklahoma State Univ

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