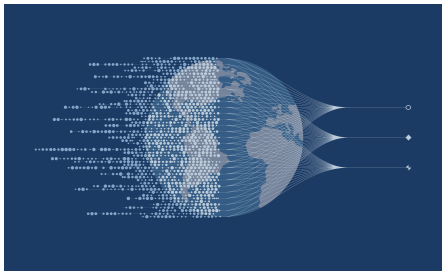

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the Potential of a Barometer as a Transfer Standard for Infrasound Calibration

Confidence in the quality of infrasound measurements is essential for meeting operational requirements in the detection and assessment of geophysical events. This confidence is partly established through accurate calibration of the instrumentation, encompassing the entire measurement process, from laboratory calibration to field deployment and calibration. In this process, transfer standards play a critical role in ensuring the traceability of measurements, from a primary reference standard to field applications. While microphones are commonly used for this purpose across a wide frequency range, their sensitivity diminishes, and instabilities arise at lower frequencies, particularly below 0.1 Hz. In the ultra-low-frequency domain, barometers, such as the Keller PAA33X, offer a viable alternative. This study presents calibration results for the Keller PAA33X barometer used as a dynamic sensor, comparing methodologies involving a dynamic primary calibration system, a laser pistonphone, and a static calibration approach. The findings provide valuable insights into the performance and reliability of barometers for infrasound measurements at ultra-low frequencies.

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