

time periods during which to undertake in-situ infrasound calibration using across-array coherence measurements

In-situ reference sensors (without wind noise reduction systems) are being installed at IMS infrasound arrays, next to each operational sensor. Without additional information, coherence measures between the reference and operational sensor recordings are unable to separate time periods for which the ambient pressure fluctuations across both sensors are dominated by either long wavelength acoustic waves or shorter wavelength wind-generated turbulence. We show, using data from four IMS arrays, that a combination of across-array coherence (semblance) and power measurements can assist in separating acoustic and turbulent pressure regimes. Such measures may allow automatic identification of time periods for which the proposed in-situ calibration technique is applicable across the 0.02 to 4Hz passband. We report on progress towards constructing a statistical signal model that may underpin an objective methodology for identifying such time periods.

Primary author: GREEN, David (AWE Blacknest)

Presenter: GREEN, David (AWE Blacknest)

Track Classification: Measurement Systems