

results from long-term infrasound sensor comparison

Previous testing has shown that infrasound sensors deployed in the field can exhibit notable deviations from their lab-based calibrations. These variations may in-part be due to changes in environmental conditions (e.g. temperature), long-term sensor drift, or other unresolved features. In early 2018 we installed two identical test elements at the Sandia National Labs FACT site with five infrasound sensors (Chaparral M50A, Chaparral M64, MB2005, MB3, and Hyperion IFS-5100) connected to a single port to the atmosphere, as well as internal and external temperature, humidity, and absolute pressure sensors. Using the MB2005 as the reference, we examine the sensor response a function of time and compare it to lab-based calibrations and environmental conditions. Preliminary results show that all sensors exhibit some variability, with the amplitude variations often >5%. The variations occur on both long-term (months) and short-term (diurnal) timescales. The short-term variability appears related to changes in environmental conditions, and is very significant (up to 20%) for the Chaparral 50A and somewhat for the MB3 (~5%). The other sensors show some long-term sensitivity offsets. Here we present the results of 6 months of testing and discuss potential sources of response variability and how they may affect station performance.

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