

passive on-site calibration at IMS infrasound arrays

The challenge for infrasound calibration is to measure the response of the operational microbarograph sensor connected to the wind-noise reduction system (WNRS). Gabrielson (2011) proposed a passive method using a calibrated reference sensor with no WNRS located beside the operational sensor. This passive on-site calibration technique at certified IMS stations has been implemented in the forests of Germany in 2015 (IS26) and Norway in 2016 (IS37) and on the ocean islands of Galapagos (IS20) and Tahiti (IS24) both in 2017. We attempt to follow the method presented by Charbit et al., (ITW 2015), and analyse data from these four locations in the frequency passband 0.02 – 4 Hz to determine the variation in the operational element sensitivity through time. Of interest is how the results of the passive calibration methodology vary between array elements and between different station locations across the passband of interest. Power spectral density (PSD) plots can be used alongside the passive on-site calibration method to identify possible data quality issues (Martysevich, ITW 2017) especially due to problems with the WNRS, or its connection to the operational microbarograph.

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