

ACOUSTICS2008/363 Calibration of vector sensors

Joseph Clark

NSWCCD, Code 7340, 9500 MacArthur Blvd., West Bethesda, MD 20817-5000, USA

Vector sensors that combine a hydrophone and a triaxial arrangement of accelerometers in a neutrally buoyant package are currently being used for underwater radiated noise measurements and other applications. Precise amplitude and phase calibration is required to obtain high quality measurements. A basic procedure that has been used successfully to calibrate measured radiated noise spectra in one-third-octave and narrowband formats will be described. Results of validation experiments that compared vector sensor measurements with other reference data will be presented. An iterative calibration scheme for improving the performance of a vector sensor employed as part of an active sonar system will also be presented.