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About the Dynamical Calibration of Microbarometers in IMS Infrasound Network

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One of the IMS technical specifications for infrasound station requires that the microbarometer frequency response should be known within the 5% accuracy. Meeting of this specification has need of precise methods of microbarometer dynamical calibration within the sensor frequency passband. One of the general and well-known techniques of dynamical calibration of a microbarometer is to use the known pressure changes simulated by the volume changes in the special chamber attached to the microbarometer. However, simulating of the pressure oscillations by changing the volume of the calibration chamber requires more precise theoretical consideration of this process in light of required accuracy of calibration.

In this paper we provide an insight to the whole thermodynamic process inside of the calibration volume and discuss the potential impact on the accuracy of calibration the ignorance of these details.