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## A SIMPLE TWO MICROPHONE METHOD OF MEASURING ABSORPTION COEFFICIENT.

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The outputs from two, closely spaced, pressure microphones placed in a standing wave tube are processed with an analogue circuit to produce signals proportional to the pressure and particle velocity at a point midway between them, using the conventional two microphone approximations. The relative gain of the particle velocity channel is adjusted so that for a plane wave travelling down the tube, the amplitude of the signal proportional to particle velocity is equal to that proportional to the pressure. Under these conditions the sum of the pressure and particle velocity signals is proportional to the instantaneous value of the incident travelling wave, and the difference between these signals proportional to the instantaneous value of the reflected travelling wave.

The absorption coefficient of a sample placed at the end of the tube can be deduced from the amplitudes of these two components. A practical example is presented of a measurement of the absorption coefficient of a foam sample from 250 Hz to 4.5 KHz, which agrees well with measurement using the conventional standing wave ratio methods. The error on the measurements is less than 10% throughout the frequency range, the sources of this error are described and their magnitudes discussed.

Further details of the method may be found in "Acoustics Letters" Vol. 5 No. 2 pp.39-44 (1981).