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TITLE: Real-time estimation of the passive attenuation for otoacoustic emission measurement probes

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ABSTRACT BODY:

Abstract (200 words): Despite hearing loss prevention programs in place at work, noise-induced hearing loss (NIHL) remains the first reported occupational disease. To improve the detection of over-exposure to noise, an initial proof-of-concept for field monitoring of inner-ear health using otoacoustic emissions (OAE) was developed and successfully validated in laboratory conditions. However, in real-life situations, the unsupervised placement of the OAE probes remains a challenge: proper fit of the probe in the ear canal is required to ensure adequate hearing protection of the wearer, to improve the signal-to-noise ratio of OAE measurements and to maintain the proper calibration of stimuli signals in the case of the Distortion Product OAE (DPOAE) approach used.

Algorithms were recently developed to quantify, in real-time, from the OAE probe microphones and receivers signals, the passive attenuation of the OAE probes. The validation of this approach was conducted, in laboratory conditions, on five human subjects exposed to industrial and pink noise recordings at realistic levels.

CURRENT TECHNICAL COMMITTEE: Noise

CURRENT SPECIAL SESSION. IF NOT SUBMITTING TO A SPECIAL SESSION, CHOOSE "NONE SELECTED.":

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