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# **Quantifying the noise environment: effects of the wearer's voice on body-mounted noise dosimeter measurements**

Steve Ryherd<sup>a</sup>, Kerstin Persson Waye<sup>b</sup>, Mendel Kleiner<sup>a</sup> and Erica Ryherd<sup>c</sup>

<sup>a</sup>Chalmers Rm. Acoust. Group, Dept. of Appl. Acoust., Chalmers Univ. of Technology, 41296 Gothenburg, Sweden

<sup>b</sup>Dept. of Environ. Medicine, The Sahlgrenska Acad. of Gothenburg Univ., Box 414, 405 30 Gothenburg, Sweden

<sup>c</sup>Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA 30332-0405, USA

The purpose of this project was to investigate the effects of the wearer's voice as a dominant sound source on body-mounted noise dosimeters in medium-level acoustic environments. Noise dosimeters provide a convenient method of quantifying an occupant's acoustical exposure. In recent years, interest in personal noise exposure has expanded beyond a necessary safety measure used in industrial settings to be used as a means of documenting a person's exposure to sound pressure levels in lower level environments like hospitals and schools. This study quantifies the contribution of the wearer's voice to the dosimeter measurement in sixteen different office conditions. Statistical analysis was used to determine the effects of the following experimental variables on the measured levels: 1) the type of room in which the measurement is taken, 2) the type of background noise present, 3) the level of background noise. Preliminary statistical results suggest significant main effects of the experimental variables with no significant interaction effects. The statistical effect of the subject's hearing level was also considered. The results of this study can improve the interpretation of dosimeter measurements in medium-level environments and may provide further motivation for alternate methods of quantifying sound pressure levels associated with body-mounted measurements.