

Abstract Submitted  
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**Vocal fold asymmetry effects on phonation aeroacoustic source strengths**<sup>1</sup> PAUL TRZCINSKI, ZACHARY YOAS, MICHAEL KRANE, Applied Research Laboratory, Penn State University — Measurements of aeroacoustic source strengths in a physical model of the human airway are taken for variations in prephonatory mechanical symmetry. Opposing synthetic silicone vocal folds were placed in the Penn State Upper Airway Model (PSUAM) and subjected to various driving pressures for which fold oscillations occur. Vocal fold symmetry was varied by changing the multilayer structure between the two vocal fold models. For each vocal fold pair, measurements include unsteady transglottal pressure, acoustic pressure in the vocal tract and trachea regions, projected glottal area, and time-varying volume flow. In particular, transglottal pressure has been shown to be an accurate measure of vocal fold drag, the aeroacoustic source strength. Measuring vocal fold drag indicates how asymmetry affects phonatory sound production.

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Michael Krane  
Applied Research Laboratory, Penn State University

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