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Empirical estimates of aeroacoustic source behavior for vocal fold models having male and female geometry[1] ELIZABETH CAMPO, MICHAEL MCPHAIL, MICHAEL KRANE, Penn State University — Measurements in the Penn State Human Airway Model (HAM) are used to estimate the aeroacoustic source spectra for vocal fold models models built to mimic the behavior of adult male and female humans. A central unanswered question in voice production is how to reliably predict how a change in physiology results in a change in the sound of the voice. Even differences such as those between normal adult males and females are still not fully explained. A combination of trangslottal pressure, radiated sound, volume flow and high speed imaging measurements in the HAM are presented. The theoretical basis for the source estimates is presented to show how the measurements lead to source strength estimates. This study is a first step in establishing how modifications in vocal fold geometry affect the voice's aeroacoustic source strength.

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