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Dynamically Scaled Glottal Flow Through Symmetrically Oscillating Vocal Fold Models LORI HALVORSON, University of Nebraska, ANDREW BAITINGER, Troy High School, ERICA SHERMAN, University of Nebraska, MICHAEL KRANE, Penn State ARL, LUCY ZHANG, RPI, TIMOTHY WEI, University of Nebraska — Experimental results derived from DPIV measurements in a scaled up dynamic human vocal fold model are presented. The 10x scale vocal fold model is a new design that incorporates key features of vocal fold oscillatory motion. This includes coupling of down/upstream rocking as well as the oscillatory open/close motions. Experiments were dynamically scaled to examine a range of frequencies, 100 – 200 Hz, corresponding to the male and female voice. By using water as the working fluid, very high resolution, both spatial and temporal resolution, was achieved. Time resolved movies of flow through symmetrically oscillating vocal folds will be presented. Both individual realizations as well as phase-averaged data will be shown. Key features, such as randomness and development time of the Coanda effect, vortex shedding, and volume flow rate data will be shown. In this talk, effects associated with paralysis of one vocal fold will be discussed. This talk provides the baseline fluid dynamics for the vocal fold paralysis study presented in Sherman, *et al.* Supported by the NIH.

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