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Computation of flow through a time-varying rectangular orifice JARROD FENSTERMACHER, JOEL PELTIER, MICHAEL KRANE, Penn State University, APPLIED RESEARCH LABORATORY TEAM — This talk will present results of a computation of the flow through a time-varying rectangular orifice. The geometry and motion of the walls are meant to produce a flow dynamically similar to that in the human glottis during phonation, and to experiments. The computations were performed using acuSolve, a 2nd-order accurate (time & space), finite-element flow solver from acuSim Corporation of Mountain View, CA. Four cases are studied, corresponding to a reduced frequency of vibration ranging from 0.01 to 0.04, and a Reynolds number of 8000. The results are compared to experiments performed in the same geometry, Reynolds number, and reduced frequency.

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