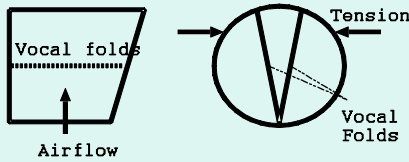


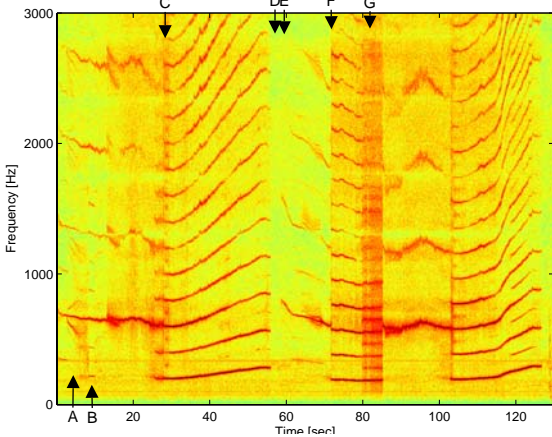
Motivation

- Excised Larynx Experiment: Studying Vocal Fold Mechanism
- Fundamental for Biomechanical Modeling: Myoelastic-aerodynamic Theory
- Nonlinear Phenomena: Aponia, Harmonics, Subharmonics, Biphonation, Chaos, Bifurcation
- Chest and Falsetto Registers, Register Transition, and Hysteresis
- 3-Mass Model

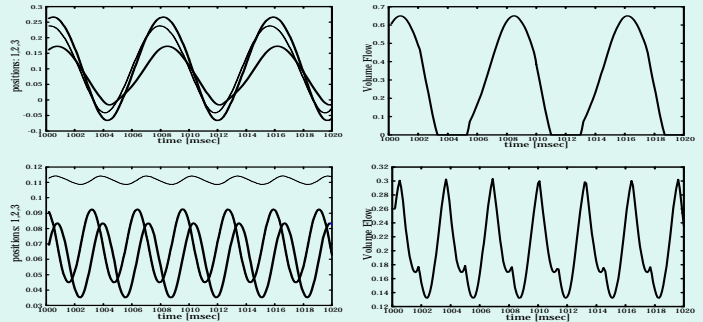
Experimental Setup



Spectrogram of excised larynx and forcing strength
 (B: Subharmonics; C,E,F: Transition; D: Aponia; G: Chaos)

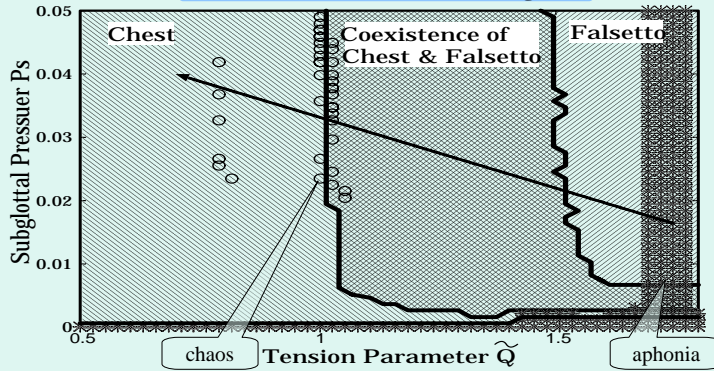


Simulations

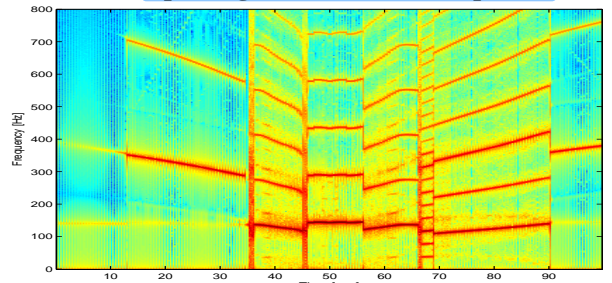


Time series of 3 masses (left) and glottal wave (right).
 Upper: Chest, Lower: Falsetto

2-dimensional bifurcation diagram



Spectrogram on bifurcation path



Simplified 3-Mass Model

