

INTRODUCTION TO SPEECH SCIENCE

Week 3 – Acoustics of Vocal Fold Vibration

Key points to understand

- How the vocal folds make sound, and how sound travels through the air
- Waveform and spectrum displays
- Amplitude and frequency
- periodic and aperiodic sounds
- simple, complex, transient, and noise sounds
- Fourier analysis and synthesis

Readings

Recommended: Speaks, *Introduction to Sound*, Chapman and Hall, 1996. Chapter 6. (2nd edition: pp217-239)

Background: Fry, *Physics of Speech*, Cambridge 1979, Chapters 1-5.

Ladefoged, *Elements of Acoustic Phonetics*, U. Chicago Press 1996, Chapter 4.

Rosen and Howell, *Signals and Systems for Speech and Hearing* (generally).

Useful Websites

<http://www.gmi.edu/~drussell/Demos.html>

<http://library.thinkquest.org/19537/Physics.html?tqskip1=1>

<http://www.glenbrook.k12.il.us/gbssci/phys/Class/sound/soundtoc.html>