

CHAPTER OVERVIEW

11: Tubes

In this chapter we start with resonance in a tube. Once the basic behavior of pressure waves in a tube are explained we look at various instruments that are basically tubes, such as [flutes](#), [brass](#), [woodwinds](#), and [pipe organs](#).

Key Terms:

Displacement node versus pressure node, tube resonance, tube harmonics, impedance, reed, fipple, edge tone, embouchure, free reed aerophones.

[11.1: Standing Waves in a Tube](#)

[11.1.1: Tube Resonance](#)

[11.1.2: Standing Wave Simulation](#)

[11.2: Reflection of Waves at a Boundary](#)

[11.2.1: Reflection of Waves](#)

[11.2.2: Reflection Simulation](#)

[11.3: Impedance](#)

[11.3.1: Impedance](#)

[11.3.2: Impedance Simulation](#)

[11.3.3: Woodwind Instruments](#)

[11.3.4: Brass Instruments](#)

[11.3.5: Pipe Organs and Other Reed Instruments](#)

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