

Acoustics

Chapter 1 Outline

Medium

- mass - quantity of matter**
- elasticity - “recover from distortion”**
- air**
 - molecules**
 - density**
 - pressure**
 - temperature**

Vibration

- Newton’s first law of motion: inertia**
- Newton’s third law of motion: reaction forces**

Sound source acting on a medium

- movement of air particles**
- compression**
- rarefaction**
- propagation**

Physical Quantities

- length**
- mass**
- time**
- displacement**
- velocity**
- acceleration**
- force**
- pressure**

Mass-Spring system

Conservation of Energy

- potential energy**
- kinetic energy**

Characteristics of pendulum motion

- amplitude**
- frequency (Hertz, Hz)**
- period (s)**

Speed of Sound

- Vibration of air molecules**
- Speed of propagation**

Wave motion

- Transverse motion**
- Longitudinal motion**