

Objectives of Chapter 16

One of the primary subjects of physics is **waves**.

We will discuss in this chapter **transverse traveling waves** and their properties.

After reading this chapter you should be able to:

1. Know there are **two types of waves**, i.e. mechanical and electromagnetic
2. Distinguish between **transverse** and **longitudinal** waves
3. Define the various **parameters in a wave equation**
4. Know the equation of **the speed** of a traveling wave **in general**
5. Know the equation of **the speed** of a wave traveling on a **stretched string**
6. Calculate **the power transmitted** by a wave traveling on a stretched string
7. Understand **the principle of superposition** of waves
8. Write and apply **the resultant wave** of two equal waves **moving in the same direction**
9. Understand and apply the principle of **standing waves** and **resonance** and be able to calculate **the resonant frequencies** in a vibrating string fixed at both ends.