

Seismic Waves:

Seismic waves are the vibrations from earthquakes that travels through the earth.

Types of Seismic waves:

Seismic waves propagate through the **inner layer of the earth** and also propagate **along the surface of wave**.

1. Body wave: [P wave and S wave]

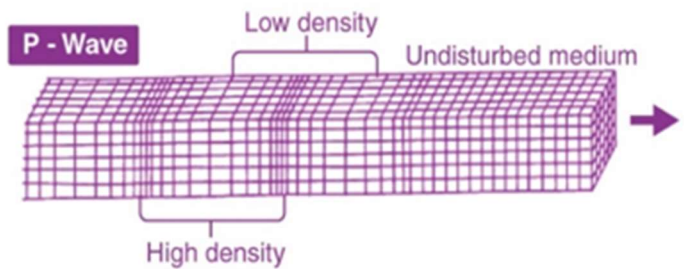
Those seismic wave that travels through the interior layers of the earth.

- They travel faster than surface wave
- They have higher frequency
- They can be **longitudinal** as well as **transverse**.
- Longitudinal waves are called **P waves** or primary wave
- Transverse body wave are called **S wave** or secondary waves.

i. P wave:

It travels through the solid rocks and fluid present inside earth. It pushes and pulls the rocks in the direction of the propagation of the wave and produces compressions. So, this wave is also called the compression wave.

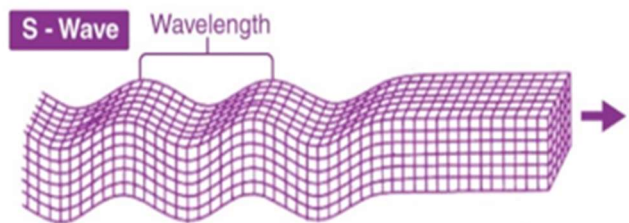
- These wave travels at **high speed** so are the first wave to be recorded in seismic station (**6 to 8 km per sec**) and called as primary wave.
- Their amplitude goes on decreasing as they get farther from their source.
- During propagation of wave, particles also move **along the direction of the wave**. So P waves are called **longitudinal wave**.



ii. S wave:

It is called as secondary wave because these waves are the second waves to be recorded on the seismic station.

- These wave travel much slower than P wave (**about 3.5 km per sec**) and can propagate through solid only.
- During propagation the particles moves in a direction perpendicular to the direction of propagation of wave so called transverse waves.
- **These waves cannot travel through liquid** (due to lack of shear strength in liquid) **but can travel through solid so called as shear waves**.



2. Surface Waves:

These seismic waves travel along the surface of the earth. Like ripple wave in water.

- They have low frequency and arrives later than body wave.
- Surface waves spread out slowly and their energy is confined to a smaller volume on surface.