

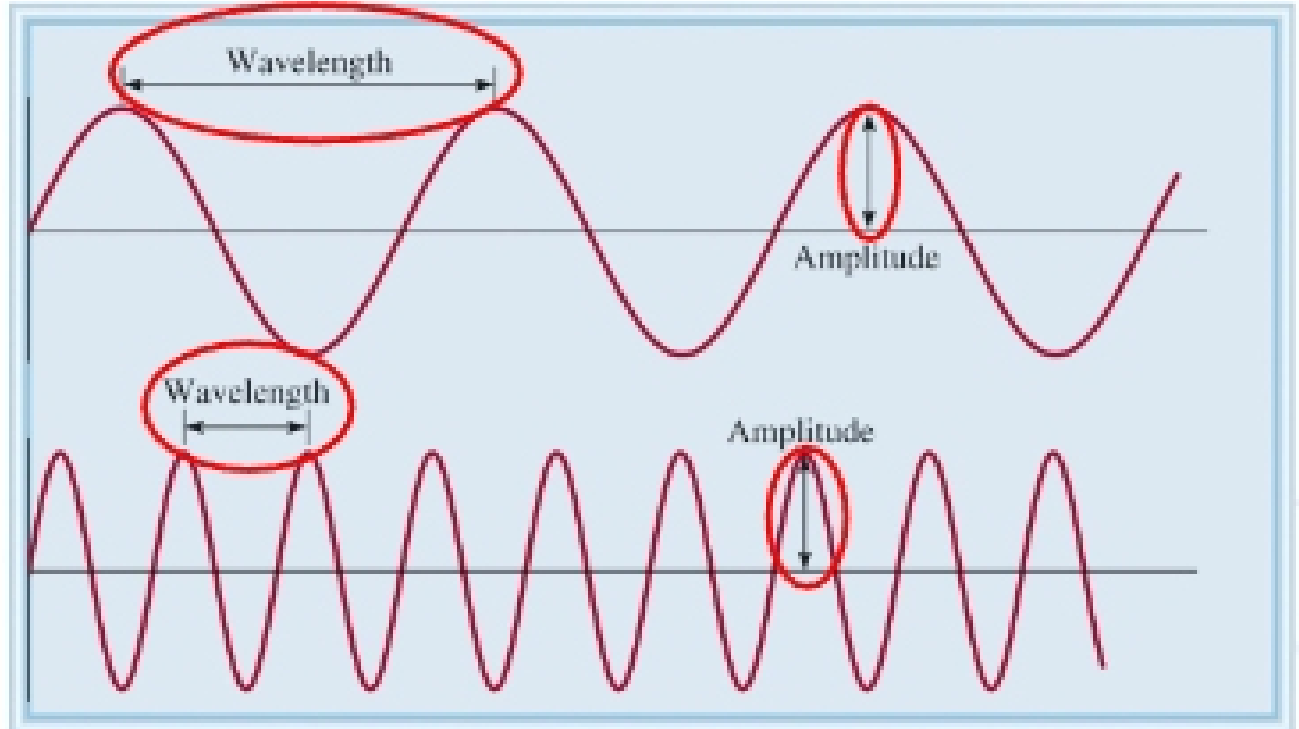
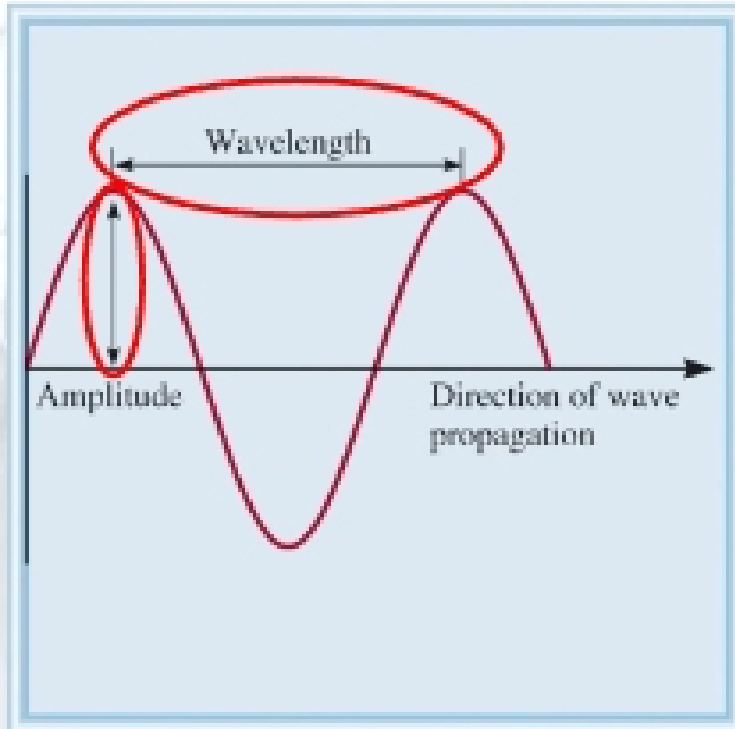
© Professor Ahmed H. Zewail/California Institute of Technology, Dept. of Chemistry

Quantum Theory and the Electronic Structure of Atoms

Chapter 7

Properties of Waves

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Wavelength (λ) is the distance between identical points on successive waves.

Amplitude is the vertical distance from the midline of a wave to the peak or trough.

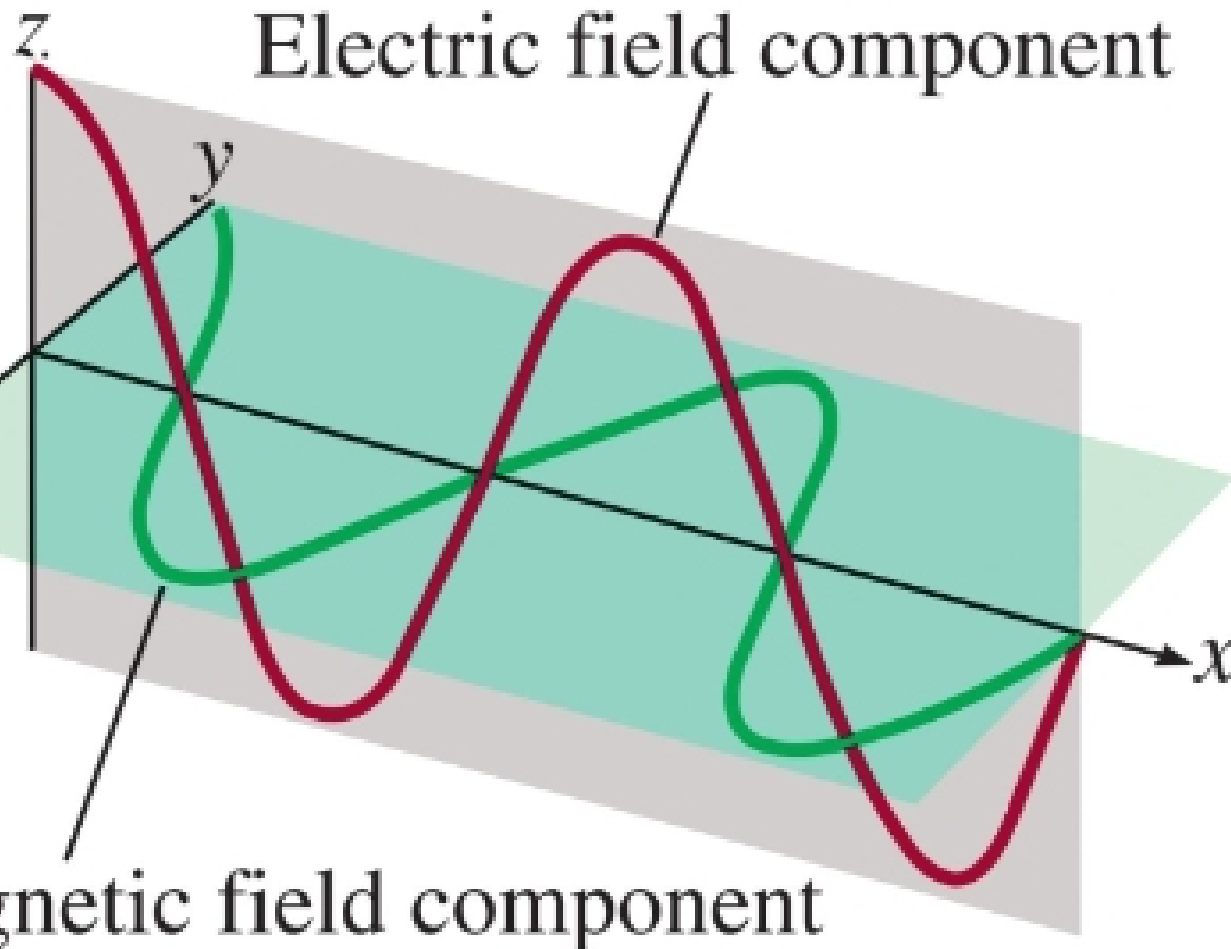
Frequency (ν) is the number of waves that pass through a particular point in 1 second (Hz = 1 cycle/s).

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The speed (u) of the wave = $\lambda \times \nu$

Maxwell (1873), proposed that **visible light consists of electromagnetic waves.**

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Electromagnetic radiation is the emission and transmission of energy in the form of electromagnetic waves.

Speed of light (c) in vacuum = 3.00×10^8 m/s

All electromagnetic radiation

$$\lambda \times \nu = c$$