Interference of light

- Modification of intensity from superposition of two waves
- Non uniform distribution of energy due to superposition of two light waves

Factors affecting intensity at a point in interference

- Amplitude of component waves
- Phase relationship of component waves

Types of interference in optics

- Constructive
- Destructive

Condition for constructive interference

- Same frequency of waves
- Same phase of waves

Consequence of constructive interference

Amplitude of resultant wave is equal to sum of amplitude of two waves

Condition for constructive interference

Phase difference between the waves by π

Consequence of destructive interference

Amplitude of resultant wave is equal to difference of amplitude of two waves

Sustained interference in optics

Position of maxima and minima of intensity of light remain fixed with time

Term for sustained interference in optics

Permanent interference

List of conditions for sustained interference

- Coherent source
- Equal amplitude
- Monochromatic
- Narrow source
- Continuous emission
- Same line of propagation