Image from toppr.com: diffraction

2304104: GEN PHYS II
2304154: PHYS ELEC ENGS

Update: March 29, 2022

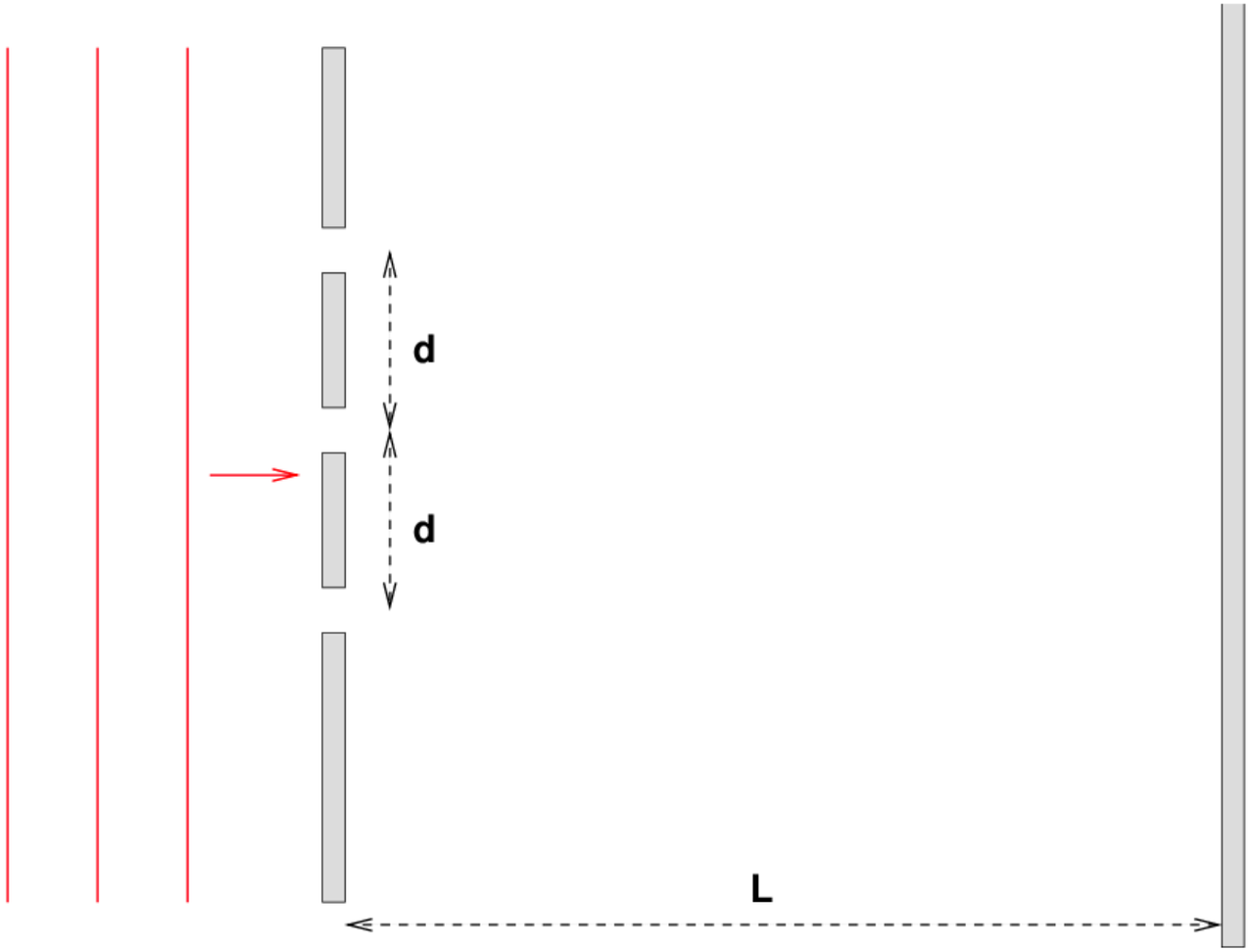
Diffraction patterns and polarization

- Introduction to diffraction patterns
- Diffraction patterns from narrow slits
- Resolution of single-slit and circular apertures
- The diffraction grating
- Diffraction of x-rays by crystals
- Polarization of light waves

Phat Srimanobhas (phat.s@cern.ch)
https://twiki.cern.ch/twiki/bin/view/Main/PhatSrimanobhasTeaching

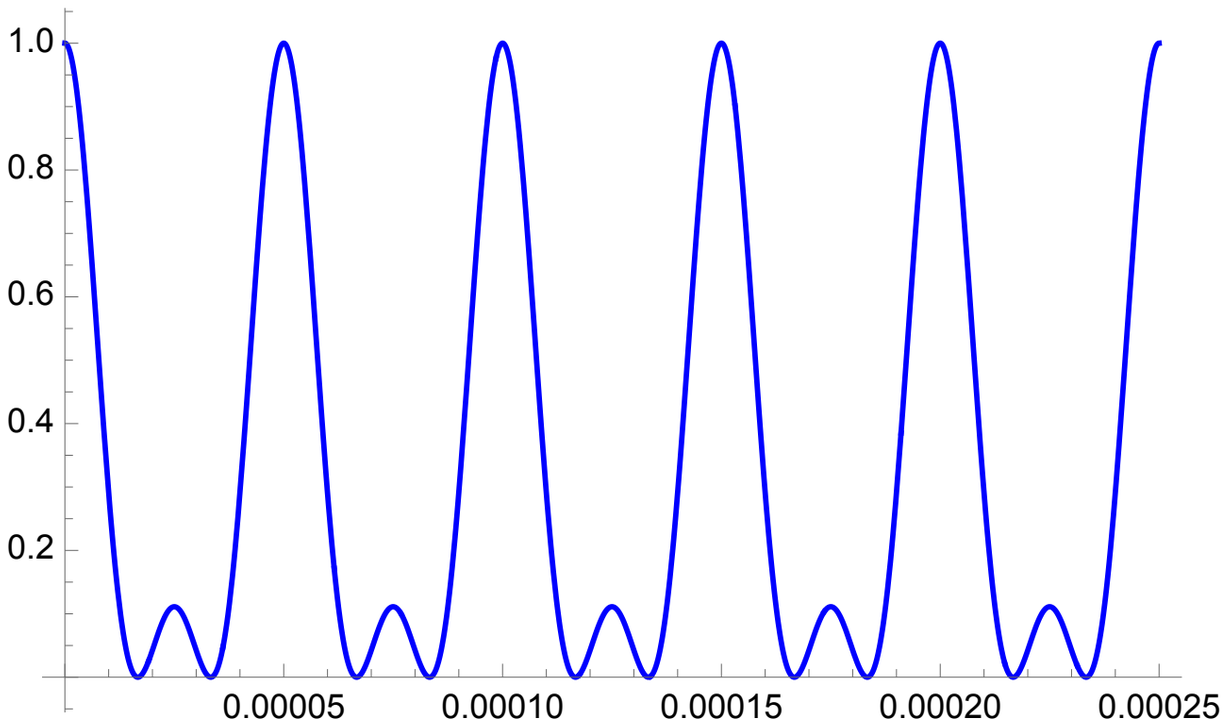
Interference from 3 slits

Suppose a monochromatic coherent source of light passes through three parallel slits. Calculate the intensity, visualize it, and find the condition for maxima in the interference pattern.

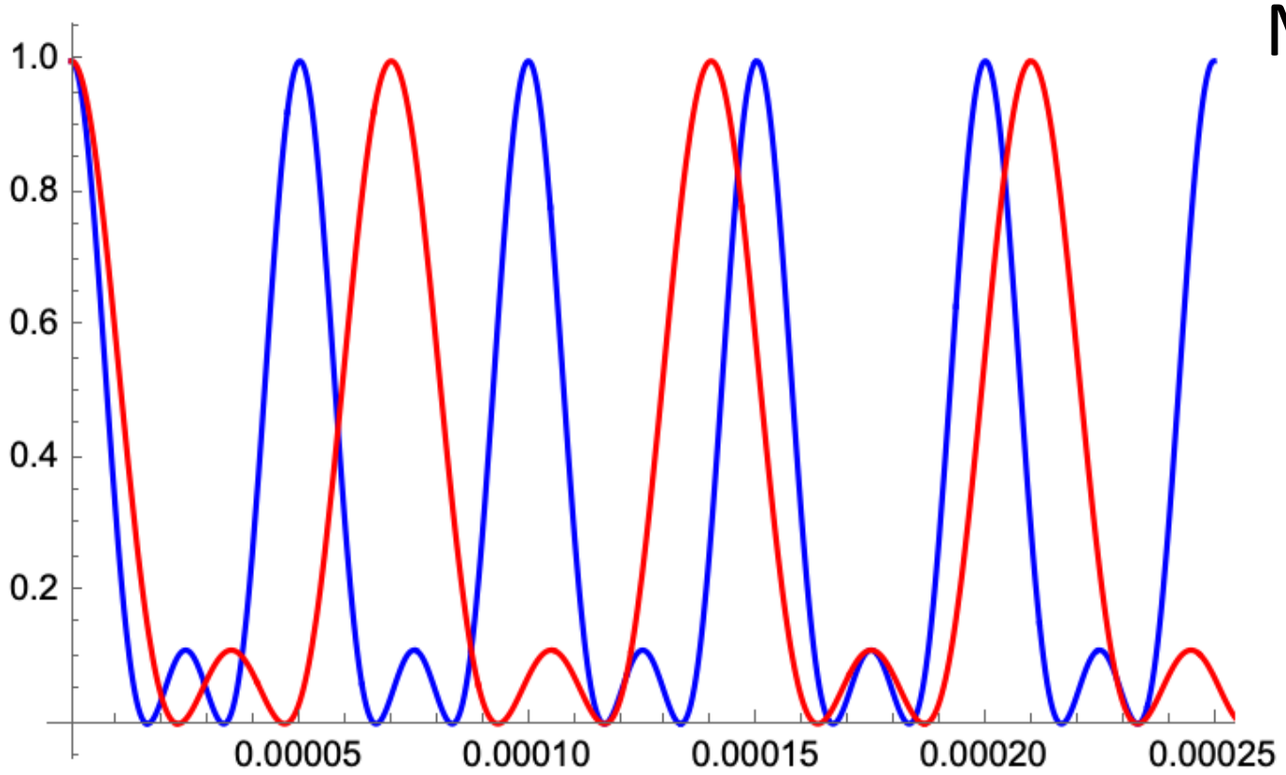


Condition for maxima in the interference pattern:

Interference from 3 slits



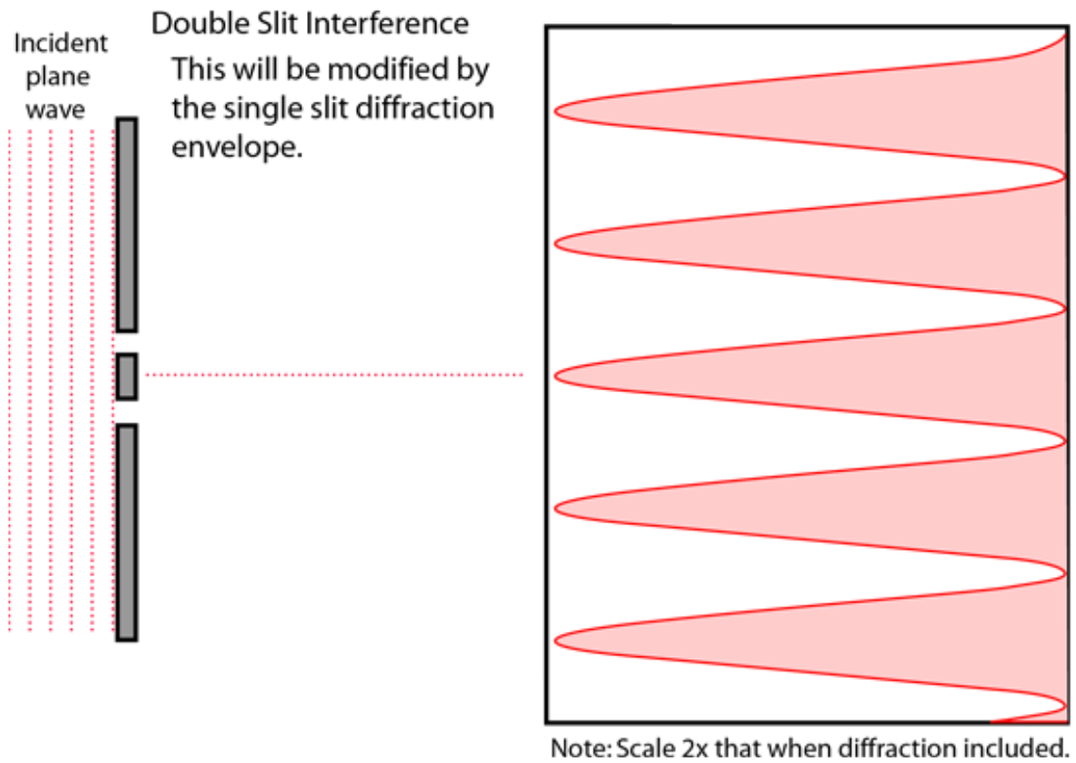
Consider minima:

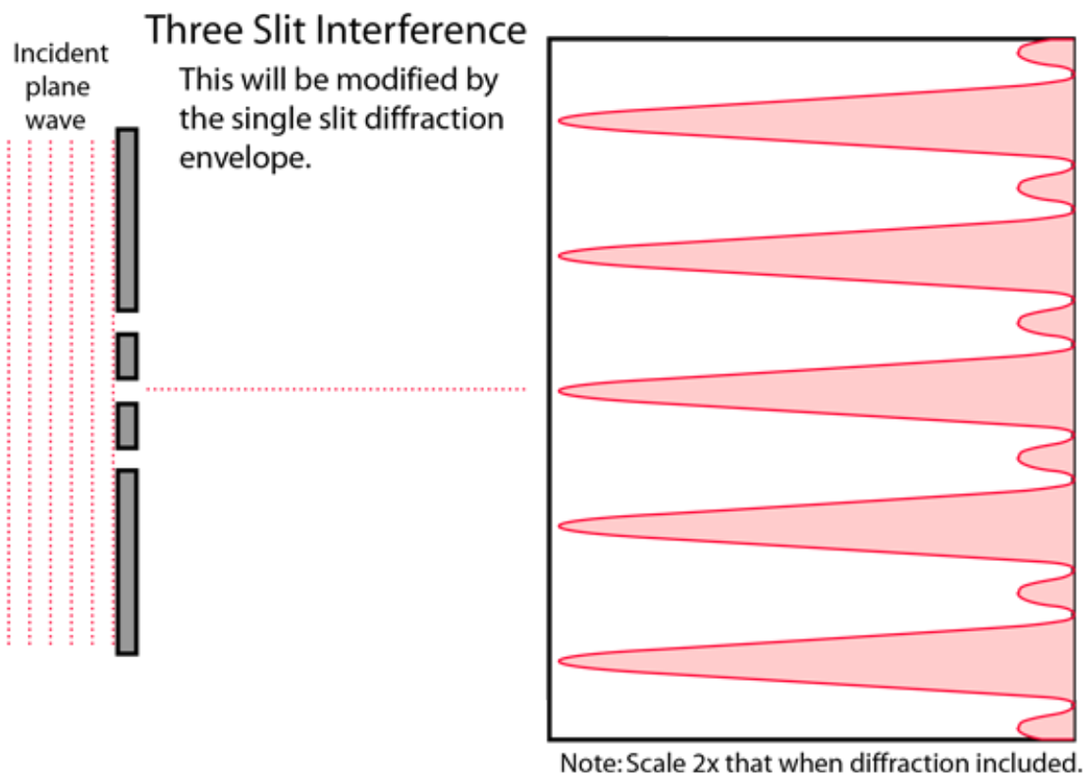


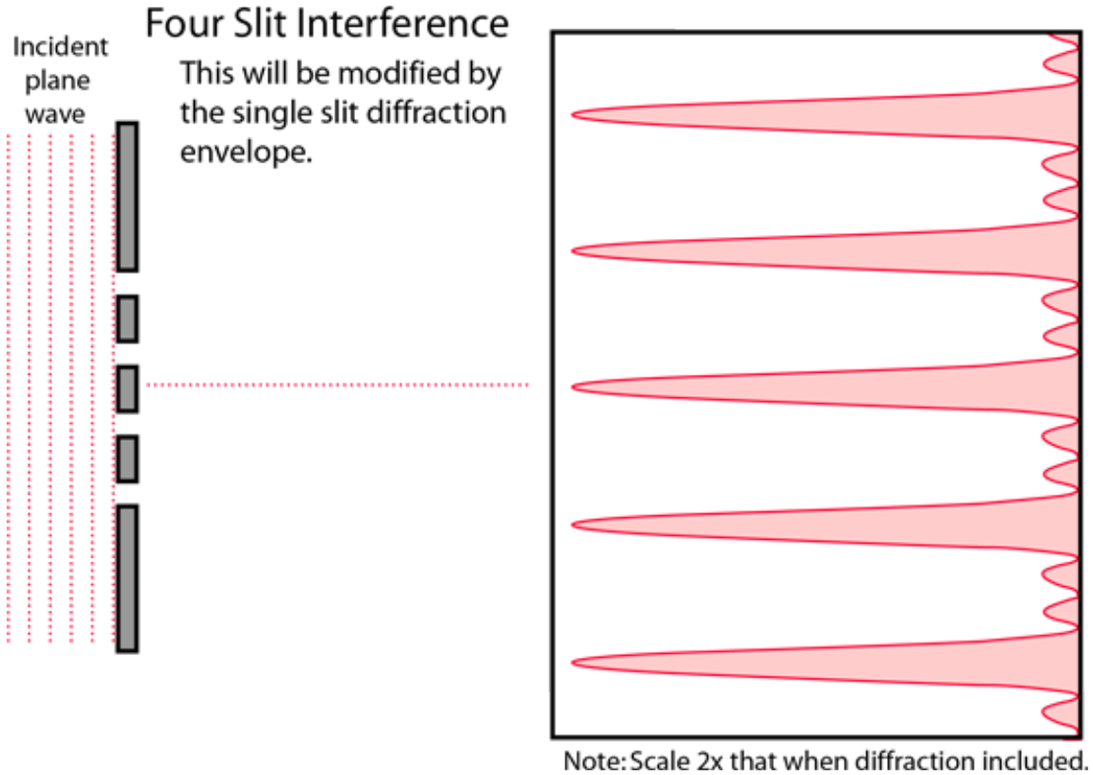
Mix wavelengths:

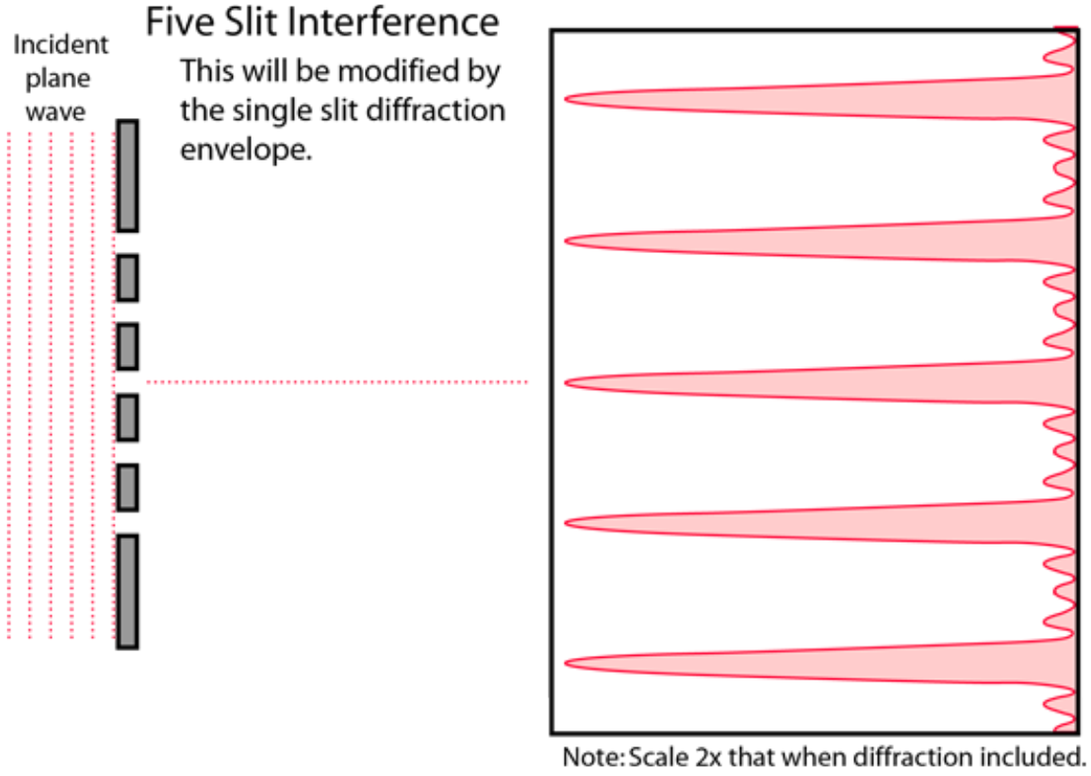
Interference from N slits

Interference from N slits



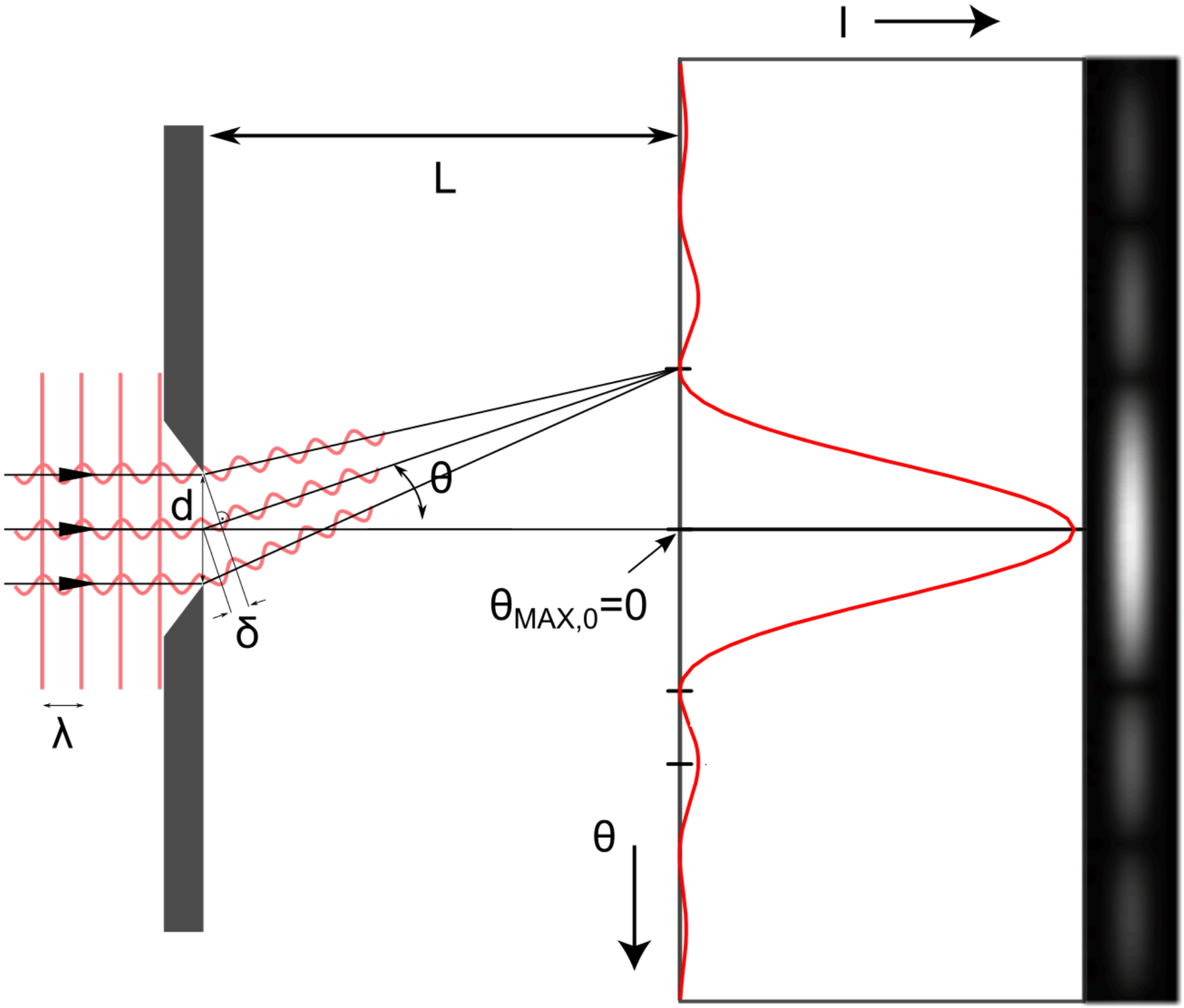






Grating and diffraction

A single-slit diffraction



General condition for destructive interference:

Intensity of single-slit diffraction

Intensity of two-slit diffraction patterns