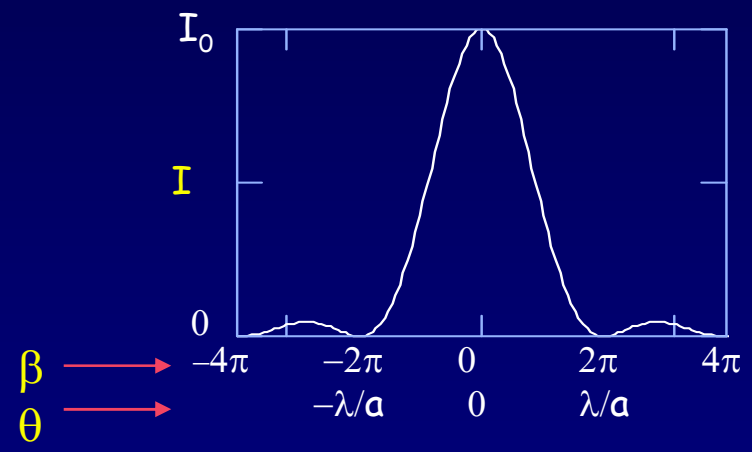
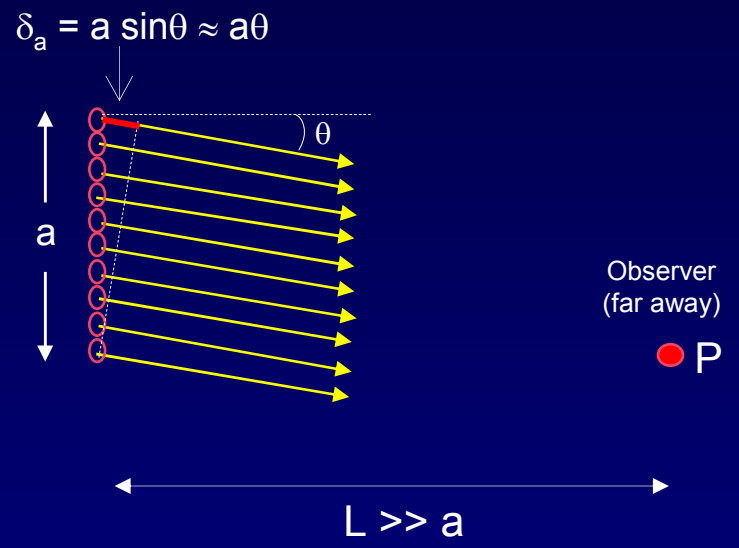
Single-slit Diffraction — Summary

The intensity of a single slit has the following form:

$$I_1 = I_0 \left(\frac{\sin(\beta/2)}{\beta/2} \right)^2$$

Derivation is in the supplement.





β = phase difference between waves coming from the top and bottom of the slit.

Single Slit Diffraction Features:

First zero: $\beta = 2\pi \Rightarrow \theta \approx \lambda/a$

Secondary maxima are quite small.