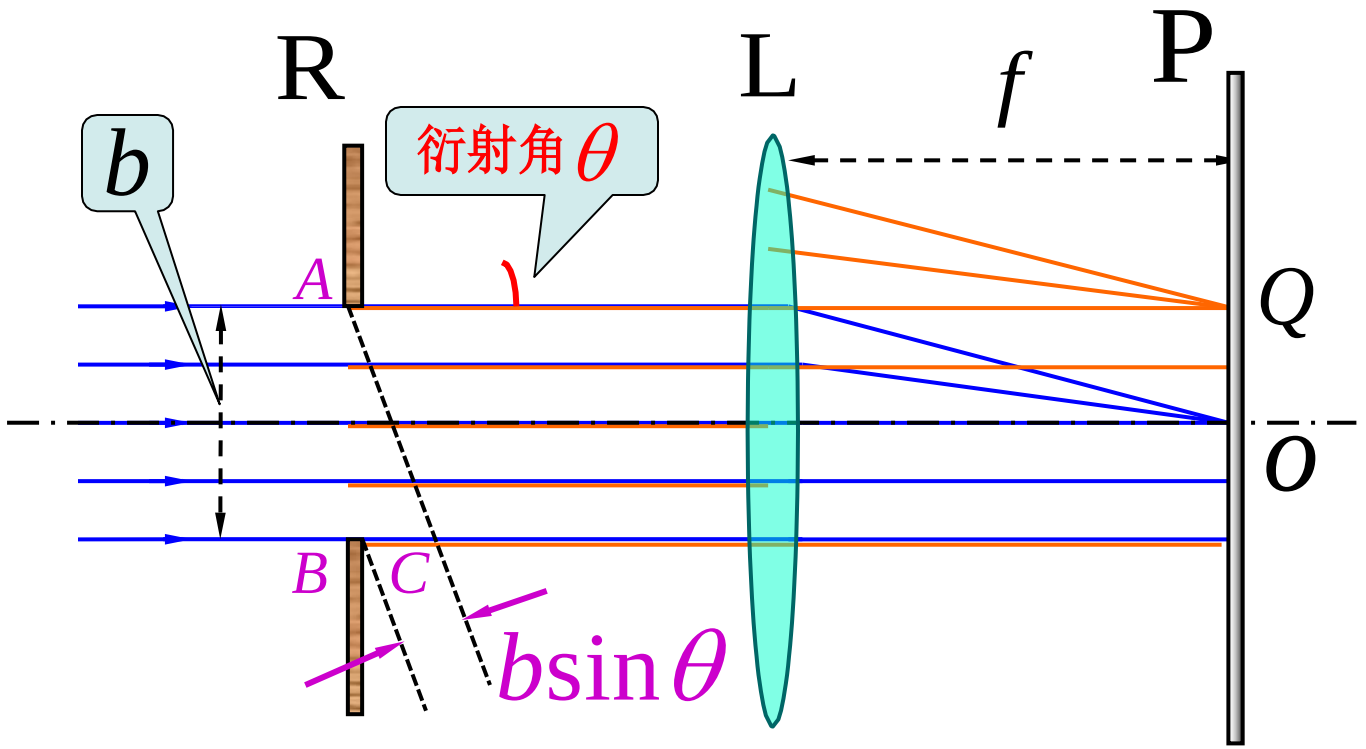
# 夫琅禾费单缝衍射

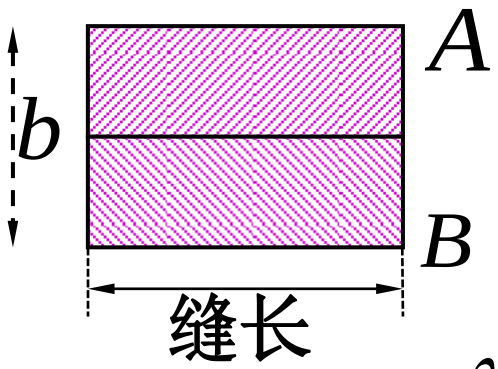



（衍射角 $\theta$：向上为正，向下为负 .）

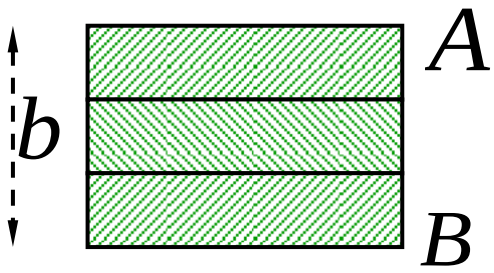
菲涅尔波带法

$$BC = b\sin\theta = \pm k\frac{\lambda}{2} \quad (k = 1,2,3,\cdots)$$

# 一　半波带法

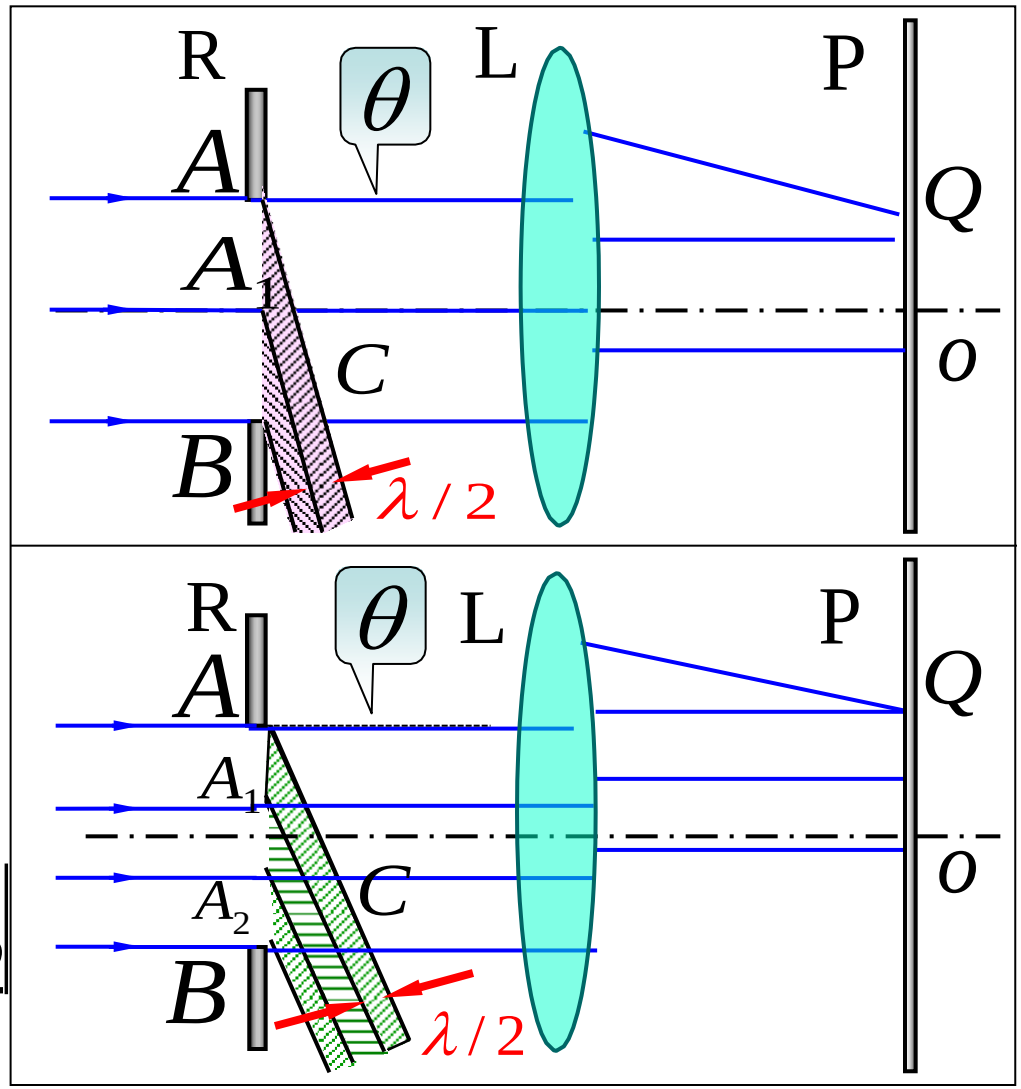


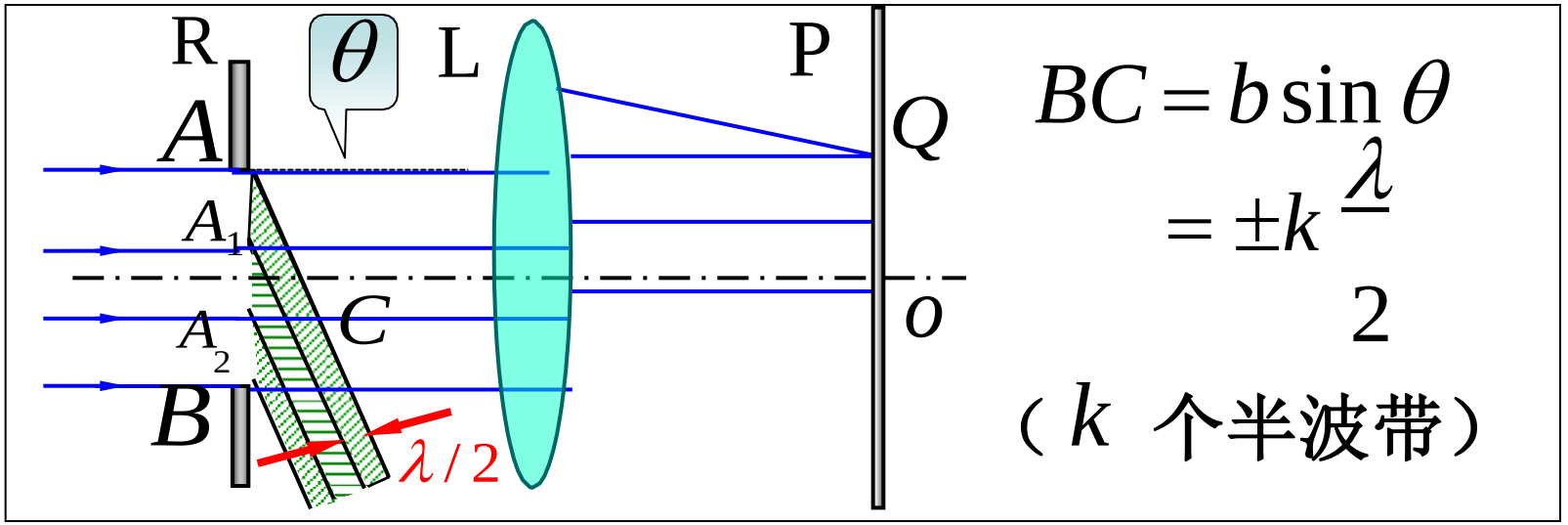

$$b\sin\theta = \pm 2k\frac{\lambda}{2}$$




$$b\sin\theta = \pm(2k+1)\frac{\lambda}{2}$$

$$k = 1,2,3,\cdots$$






$$BC = b\sin\theta = \pm k\frac{\lambda}{2}$$

（$k$ 个半波带）

$$\begin{cases} b\sin\theta = 0 & \text{中央明纹中心} \\ b\sin\theta = \pm 2k\dfrac{\lambda}{2} = \pm k\lambda & \text{干涉相消(暗纹)} \\ b\sin\theta = \pm(2k+1)\dfrac{\lambda}{2} & \text{干涉加强(明纹)} \\ b\sin\theta \neq k\dfrac{\lambda}{2} & \text{（介于明暗之间）} \end{cases}$$

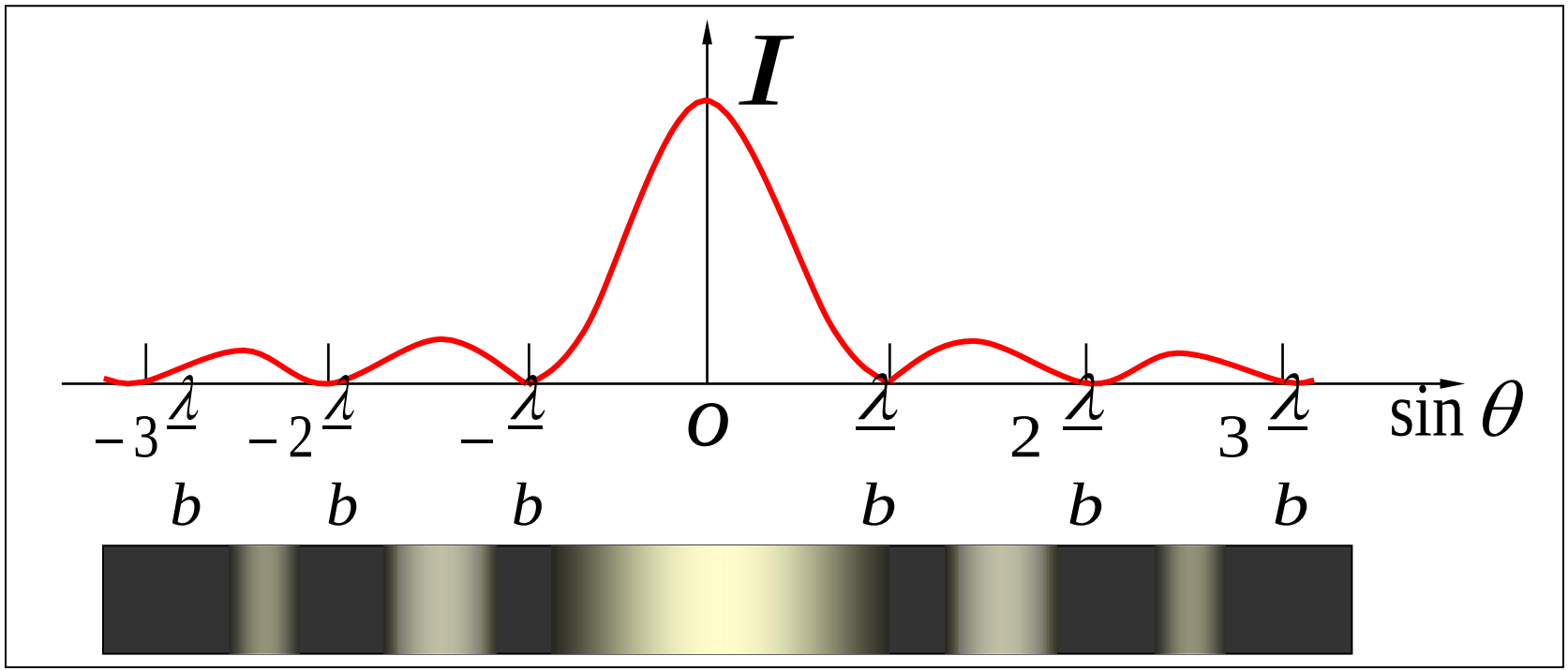
$2k$ 个半波带

$2k+1$ 个半波带

$(k = 1,2,3,\cdots)$

# 二　光强分布

$$\begin{cases} b\sin\theta = \pm 2k\dfrac{\lambda}{2} = \pm k\lambda & \text{干涉相消（暗纹）} \\ b\sin\theta = \pm(2k+1)\dfrac{\lambda}{2} & \text{干涉加强（明纹）} \end{cases}$$



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