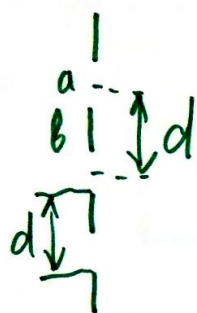


5.11.20

Диф. решётка.

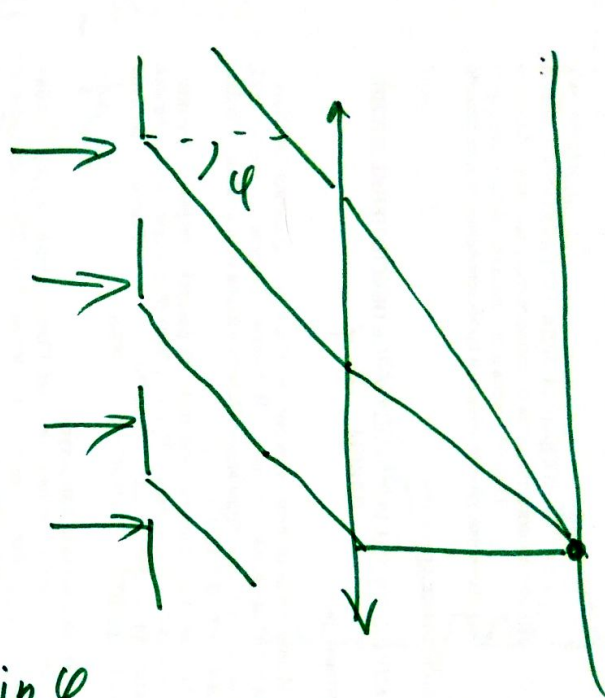
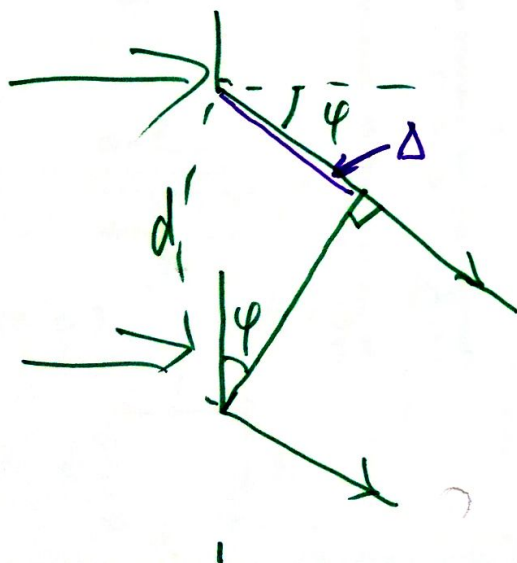


$$d = a + b$$

для угла

$$a \sin \varphi = m\lambda - \text{min.}$$

$$a \sin \varphi = (2m+1)\frac{\lambda}{2} - \text{max}$$



$$\Delta = d \sin \varphi$$

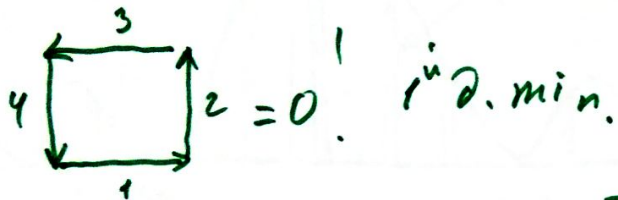
$$\text{max: } \Delta = m\lambda = d \sin \varphi$$

$$\Gamma_{\lambda, \text{max}} : m\lambda = d \sin \varphi$$

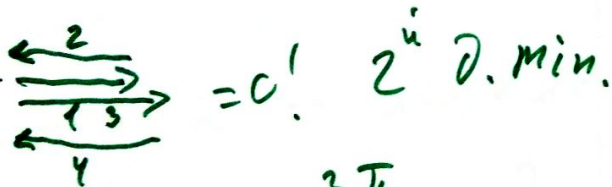
$$\Gamma_{\lambda, \text{min}} - \text{нет}$$

$$d \sin \varphi = \frac{m'}{N} \lambda - 0. \text{ min. } m' \in \mathbb{Z}, m' = 0, N, 2N, 3N, \dots$$

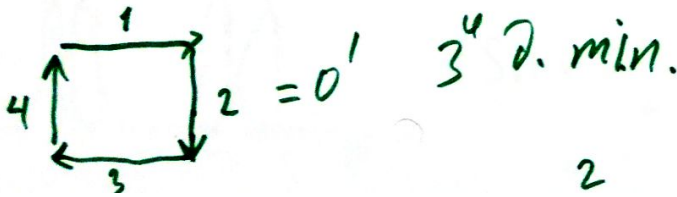
$$(N=4), m'=1 \quad \Delta = \frac{1}{4} \lambda \Rightarrow \Delta \varphi = \frac{\pi}{2}$$



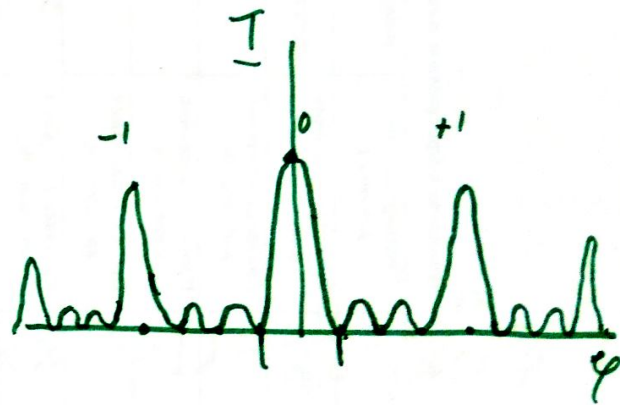
$$m'=2 \quad \Delta = \frac{2}{4} \lambda, \Delta \varphi = \pi$$

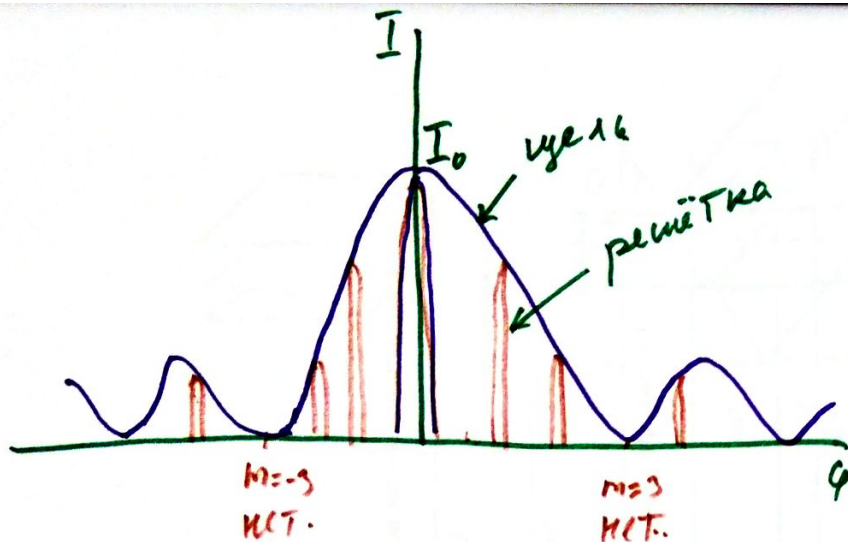


$$m'=3 \quad \Delta \varphi = \frac{3\pi}{2}$$



2





$$I = I_0 \frac{\sin^2(\frac{\delta}{2})}{(\frac{\delta}{2})^2} \cdot \frac{\sin^2(\frac{N\delta}{2})}{\sin^2(\frac{\delta}{2})}$$

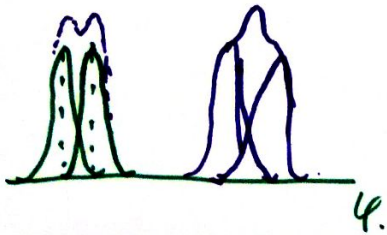
$$\delta = \frac{2\pi a}{\lambda} \sin \varphi \quad \gamma = \frac{2\pi d}{\lambda} \sin \varphi$$

$$D = \frac{d\varphi}{d\lambda}$$

$$[D] = \mu^{-1}$$

$$d \sin \varphi = m\lambda \Rightarrow d \cos \varphi d\varphi = m d\lambda \Rightarrow D = \frac{d\varphi}{d\lambda} = \frac{m}{d \cos \varphi}$$

Результат

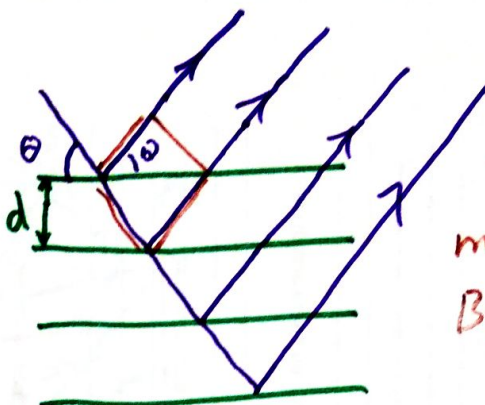


$$R = \frac{\lambda}{\delta \lambda}$$

$$d \sin \varphi = m(\lambda + \delta \lambda) = (m + \frac{1}{N}) \lambda$$

T. max 1-й мин.

$$R = \frac{\lambda}{\delta \lambda} = mN$$



$$\Delta = 2d \sin \theta$$
$$\text{max: } 2d \sin \theta = m\lambda$$

Брэгг - Брэгг

