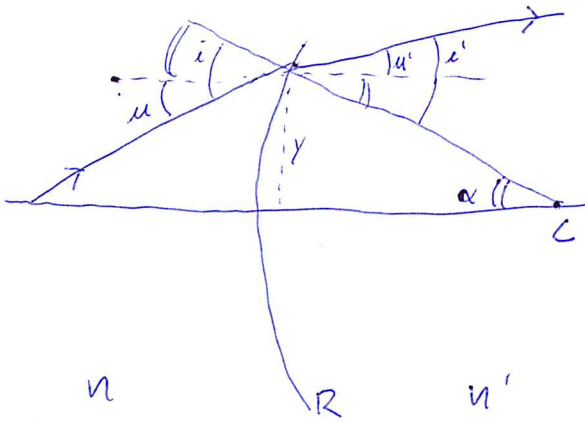


GAUSSIAN FORMULA (PRTE 1)



$$\alpha = \frac{y}{R} = y \cdot C$$

$$\begin{cases} i = u + \alpha \\ r = u + \alpha \end{cases}$$

geometria di figura

$$n i = n' r$$

legge di Snell

$$n(u + \alpha) = n'(u + \alpha)$$

$$n u + n \alpha = n' u + n' \alpha$$

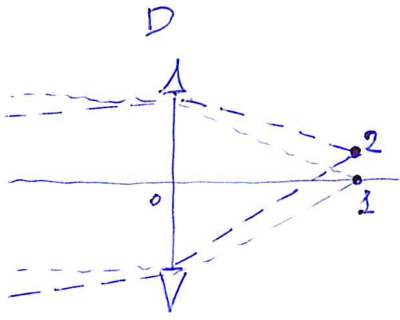
$$n' u = n u + \alpha(n - n')$$

$$n' u = n u - (n' - n) \alpha$$

$$n' u = n u - y \left(\frac{n' - n}{R} \right) = \varphi \text{ (Power)}$$

$$\boxed{n' u = n u - y \varphi \quad \text{PRTE 1}}$$

CRITERIO DI REYLEIGH

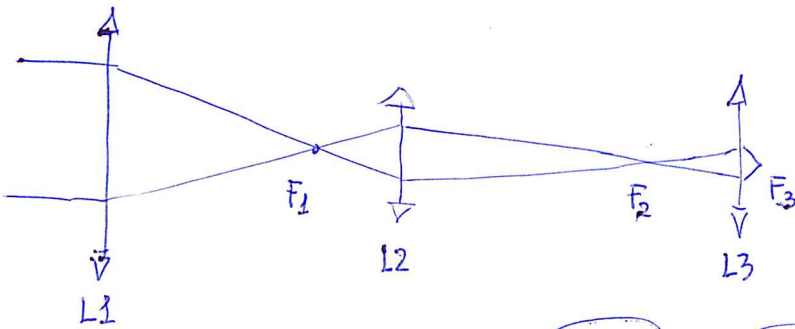
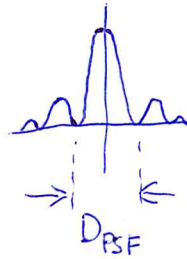


$$\left\{ \begin{array}{l} \theta_{\text{Ris}} = 1,22 \cdot \frac{\lambda}{D} \quad \text{angolo di risoluzione} \\ \text{di un'apertura } D \\ \overline{\Delta z} \text{ sia pari a } y = \theta_{\text{Ris}} \cdot f \quad \left(\begin{array}{l} \text{leva ottica} \\ \overline{z_0 - z_0} \end{array} \right) \end{array} \right.$$

$$y = \theta_{\text{Ris}} \cdot f = 1,22 \cdot \frac{\lambda}{D} \cdot f = 1,22 \cdot \lambda \cdot \frac{f}{D}$$

$$D_{\text{AIRY}} = 2,44 \cdot \lambda \cdot \frac{f}{D}$$

$m \neq 1$ e non in aria



@ $\lambda = 1 \mu\text{m}$
Fuochi in aria

$$\textcircled{2,44 F_1} ; \quad \textcircled{2,44 F_2} ; \quad \textcircled{2,44 F_3} = \text{PSF diffraction limited}$$

$$D_{\text{PSF}} = 2,44 \frac{F}{D}$$