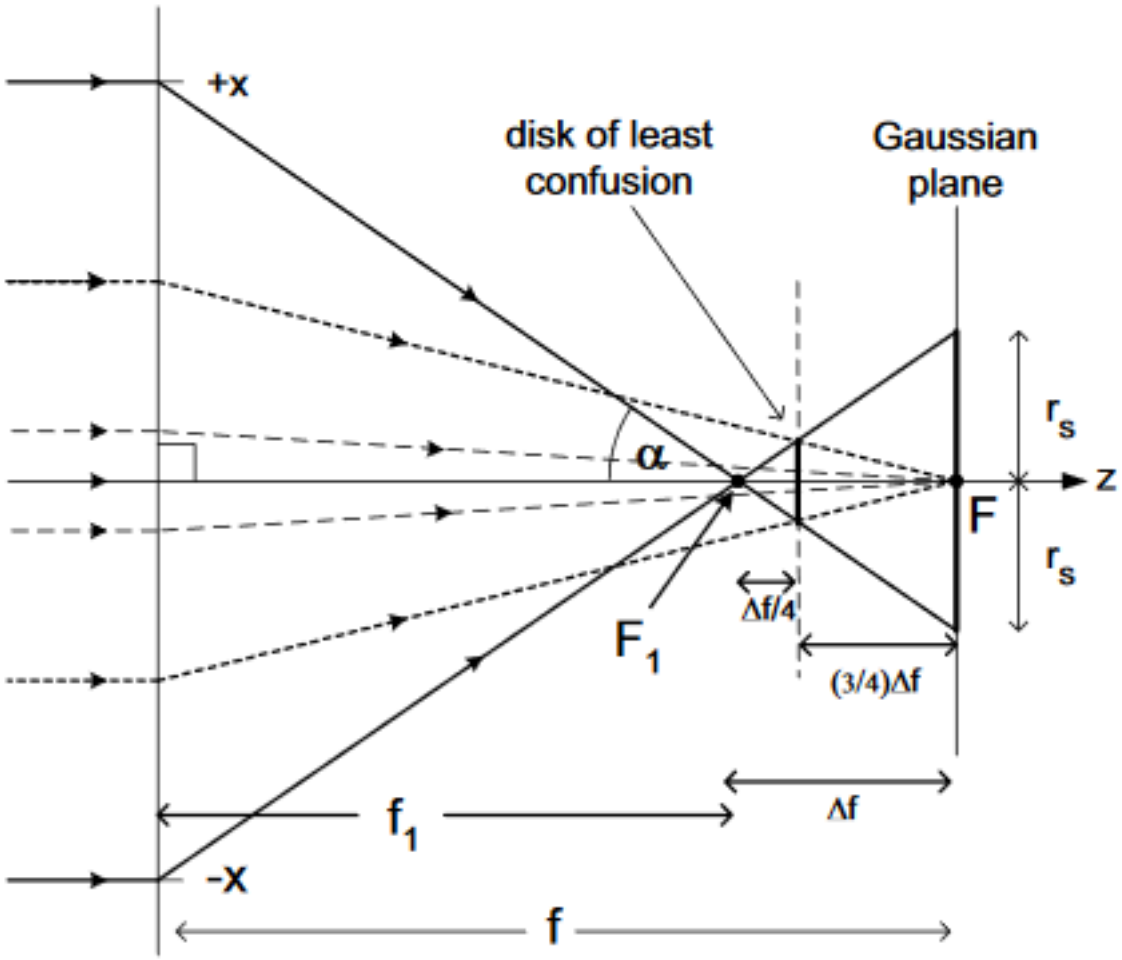
Chromatic Aberrations



$$1/f = const. \cdot F2$$

$$\triangle f \simeq c \cdot x^2$$

$$x = f_1 tan\left(\alpha\right) \simeq f \cdot tan\left(\alpha\right)$$

$$r_s = \triangle f \cdot tan\left(\alpha\right) \simeq \triangle f \cdot \alpha \approx \left(c\left(f \cdot tan\left(\alpha\right)\right)^2\right) \cdot tan\left(\alpha\right) = C_s tan\left(\alpha\right)^3 = C_s \cdot \left(\frac{max\left\{x\right\}}{f - \triangle f}\right)^3$$

$$\underset{f \approx f_1}{=} C_s \cdot \left(\frac{max\{x\}}{f} \right)^3 \quad (1)$$

If $f \not\approx f_1$ then replace f in (1) with $f - max\{x\}^2 \cdot \frac{C_s}{f^2}$