

SOLENSIM Model summary

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June 28, 2020

Summary

This is a summarizing description of the physical model - i.e. axial field calculation, characteristic value determination from axial field, field integrals etc.

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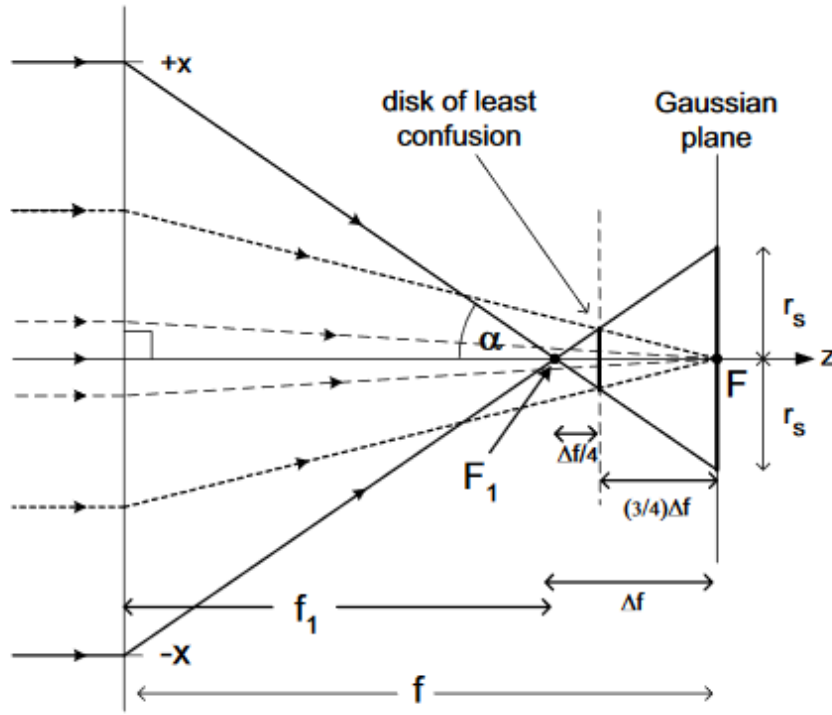


Figure 1: title

1 Chromatic aberrations and focal spot size

$$1/f = \text{const.} \cdot F^2$$

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

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

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

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

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