

Calculation of linewidth

Parameter

- Radius of curvature of mirror R1: $R_1 = 1 \text{ m}$
- Radius of curvature of mirror R2: $R_2 = 1 \text{ m}$
- Cavity Length: $L = 0.48 \text{ m}$
- Reflectivity of mirrors: $R = 0.99998$
- Speed of light: $c = 299792458 \text{ m/s}$

$$FSR = \frac{c}{2 \cdot L} \quad Gouy = \frac{FSR}{\pi} \cdot \arccos \left(\sqrt{\left(1 - \frac{L}{R_1}\right) \cdot \left(1 - \frac{L}{R_2}\right)} \right) \quad F = \dots$$

⇒

- $FSR = 312.284 \text{ MHz}$
- $Gouy = 101.783 \text{ MHz}$

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