Title

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We adjusted some mirrors to get MOT. We did some measurements.

1 Introduction

2 Theory

Theory

Figure 1: A sample figure

3 Experimental setup

4 Procedure

5 Results

5.1 Laser beam diameter

Using a movable razor blade and a powermeter, we measured the intensity as a function of the displacement of the blade along an axis perpendicular to the beam propagation direction. The results are collected in Table 1. Fitting a function of the form

$$f(x) = P + A \cdot \mathrm{erfc}(B \cdot x - C),$$

we found

$$\begin{aligned} P &= \quad 0.012 \pm 0.009 \\ A &= \quad 0.735 \pm 0.007 \\ B &= \quad 4.942 \pm 0.133 \\ C &= 198.039 \pm 5.317 \end{aligned}$$

This results in a width

$$w = 0.2860 \text{ cm } \pm 0.0077 \text{ cm}$$

Position (cm)	Power (mW)
39.4 ± 0.05	1.58 ± 0.01
39.5 ± 0.05	1.57 ± 0.01
39.6 ± 0.05	1.52 ± 0.01
39.7 ± 0.05	1.40 ± 0.01
39.8 ± 0.05	1.07 ± 0.01
39.9 ± 0.05	0.62 ± 0.01
40.0 ± 0.05	0.25 ± 0.01
40.1 ± 0.05	0.10 ± 0.01
40.2 ± 0.05	0.04 ± 0.01
40.3 ± 0.05	0.01 ± 0.01
40.4 ± 0.05	0.00 ± 0.01

Table 1: Beam power as a function of position of the razor blade. Clearly visible

6 Conclusion

References

[1] C. Wieman, G. Flowers and S.Gilbert, Am. J. Phys. **63** (1995).

[2] Unspecified Author, *FP Experiment: Rubidium MOT* (University of Bonn, 2014).

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