

The Magnesium Experiment

On this page you will find information about the magnesium experiment, manuals, instructions for certain sub-systems etc.

- [Todo](#)
- [Power Failure - Emergency Plan and Check-List](#)

To Do

- [Order list](#) Necessary things to order

Results and Important Values

Timeline (Begin: 21.12.16)

Changes at the Experiment:

- 1st homogenous Coils with Copper band: 21.12.16
- Waist measurement: clock laser: 23.12.16: Waist position was not in the center of the chamber
- Waist measurement: clock laser: 23.01.17: collimation of clock laser
- Measurement: 3P1 splitting: 24.01.17 new frequency of double pass aom: 104.8365 MHz
- Waist measurement: clock laser: 30.01.17: clock laser focused 174um @ 20.4 cm; atoms @ 26.5cm
- 2nd homogenous Coils with Copper band: 06.02.17
- Reduced lattice waist: 75.75um : 20.02.17
- Waist measurement: Lattice: 66.88um +/- 4.4: 03.03.2017

Reducing the linewidth: Measurements:

- Linewidth vs lock power: 13.02.17
- Linewidth vs Density; Linewidth vs variation of first ramp; Linewidth vs B-field; Linewidth vs lattice power; Linewidth vs 2nd ramp: 15.02.17
- Linewidth vs lattice power; Linewidth vs clock laser power: 26.02.17
- Linewidth vs B-Field (remeasured for Klaus' Thesis): 28.10.18

Preperation for the frequency measruements:

- 2nd Order Zeemann: 30.01.17
- Clock laser AC- Stark measurement: 01.02.17
- mj Splitting: 2nd copper band coils: 07.02.17; with DiffAmps: 09.02.17
- Stability analysis: clock laser locked to the atoms: $3.8 \cdot 10^{-16}$ @ 700s : 27.02.17

Devices

- [Cameras](#)
- [Lasersystems](#)
- [Vacuum](#)
- [Coils](#)
- [Power meters](#)
- [AOMs](#)

Old Lab books in the Mg lab

The old Lab books from 2004 onwards are kept in the Mg lab in the small wardrobe on top of the optics wardrobe which is used for the fiber optic components. The following lab-books were there at the time of this writing (07.08.2017):

- Karsten Moldenhauer (01.04.2004 - 09.11.2007)
- Jan Friebe (15.07.2004 - 09.11.2007)
- Karsten Moldenhauer (03.05.2005 - 07.03.2006)
- Magnesium (09.03.2006 - 14.08.2008)
- Moldenhauer/Friebe/Riedmann (20.08.07 - 19.01.2010)
- Andre Kulosa (01.2009 - 02.04.2013)
- Matthis Riedmann (20.01.2010 - 29.01.2015)

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