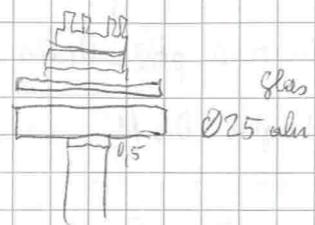


14.3.24

30

CRG - 3125 Standard 17m



WZL82

in 2s

S FlutM 0+H

6,6 0,00052

14582

ifg wide - 14 Mar 1898 > 70%

6,64 46

15861

6,68 45

16006

6,72 46

15769

6,72 52

14396

20 6.66 45 15994
20 camera-in: 67
out: 0

ifg long - 14 Mar 19 → 83% in Bildquelle
8 in

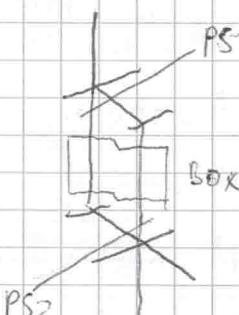
8 Aperture Y even -2 → -3 (1um nach rechts)

Z von 12 nach 14 (2um rauf)

beamspot.tif (auf 32x32 gesamt)

R - 15 Mar 1124

ifg wide 15 Mar 1126



16.3.24

31

Robot Zmax = 284700 → 278000

20 Robot Y → 75.500

20 Box ganz raus.

ifg - PS1 - 3p - 15 Mar 1918.tif

ifg - PS2 - 3p - 16 Mar 0112.tif

ifg - PS1 - 3p - 16 Mar 0720.tif

} um 30% Kontrast, Peakdrift wegen Temperatur
drift am Anfang, dann?

→ Temp const., Peakdrift

Schlauch des unteren GF hat an opt. Bank gedreht,
Außerdem war Kabel des PS1 etwas straff.

ifg - PS1 - 3p - quick, → 65%

beamspot BoxIn.tif

beamspot BoxOut.tif

4 8

ifg PS1 - 3p - quick - 16 Mar 1459 → C ≈ 82%

ifg PS2 - 3p - quick - 16 Mar 1504 → C ≈ 79 %

0.0000s H.0000s

R - 16 Mar 1714 101.258 256.748



cd - ln 0.8 R - 16 Mar 1736 54.501 134.478

cd - ln 1.0 R - 16 Mar 1758 47.683 117.819

cd - ln 1.0 R - 16 Mar 1816 25.520 59.737

cd - ln 0.5 R - 16 Mar 1841 66.817 164.228

O_{1000s} H_{1000s}

$R - 16 \text{ Mar } 1858$ 82.856 203.912
 Cd $\text{In } 0.25$

$R - 16 \text{ Mar } 2141$
 $\text{ifg PS1-3p-45pt-In08-16Mar2142.inf}$
 $\text{ifg PS2-3p-45pt-In08-16Mar2232.inf} \rightarrow T = 1.71733^\circ$

17.3.24
 $\text{ifg PS1-3p-45pt-17Mar1718 @ } X_0 = 0$
 $1808 @ X_0 = \frac{\pi}{2}$
 $1858 @ X_0 = \pi$
 $1948 @ X_0 = \frac{3\pi}{2}$

$\text{In } 1.0$ $\text{In } 0.8$
 $R - 17 \text{ Mar } 2311$
 $\text{ifg PS2-3p-45pt-In18-17Mar2313.inf} \rightarrow T = 1.70911^\circ$

18.3.24
 $\text{ifg PS2-3p-45pt-18Mar1055 @ } X_0 = 0$
 $1145 @ X_0 = \frac{\pi}{2}$
 $1234 @ X_0 = \pi$
 $1324 @ X_0 = \frac{3\pi}{2}$

Einfüllung von Polarisator etc., Grußfeld, Analysatorlage, aber Messung weiter unpolarisiert

$\text{In } 0.8$ $R - 18 \text{ Mar } 2137$
 $\text{ifg PS1-42pt-18Mar2141 @ } X_0 = 0$
 $2228 @ X_0 = \frac{\pi}{2}$
 $2314 @ X_0 = \pi$
 $19 \text{ Mar } 0000 @ X_0 = \frac{3\pi}{2}$

$\text{In } 0.8$ $R - 19 \text{ Mar } 1118$
 $\text{ifg PS1-42pt-In08-19Mar1120.inf}$
 $\text{ifg PS2-3p-45pt-19Mar1435} \rightarrow T = 1.71883^\circ$

$R - 19 \text{ Mar } 1529$

20.3.24 weiterer Aufbau der 3. Ablöse (Bragg-Crystal für pol. anal.)

ad 19.3.24 $\text{ifg PS1-42pt-In08-19Mar1548.inf}$

$R - 19 \text{ Mar } 1724$

$\text{ifg PS1-42pt-In08-19Mar1726.inf}$

$R - 19 \text{ Mar } 1938$

$\text{ifg PS1-42pt-In08-19Mar1940.inf}$

2054.inf

2208.inf

2322.inf

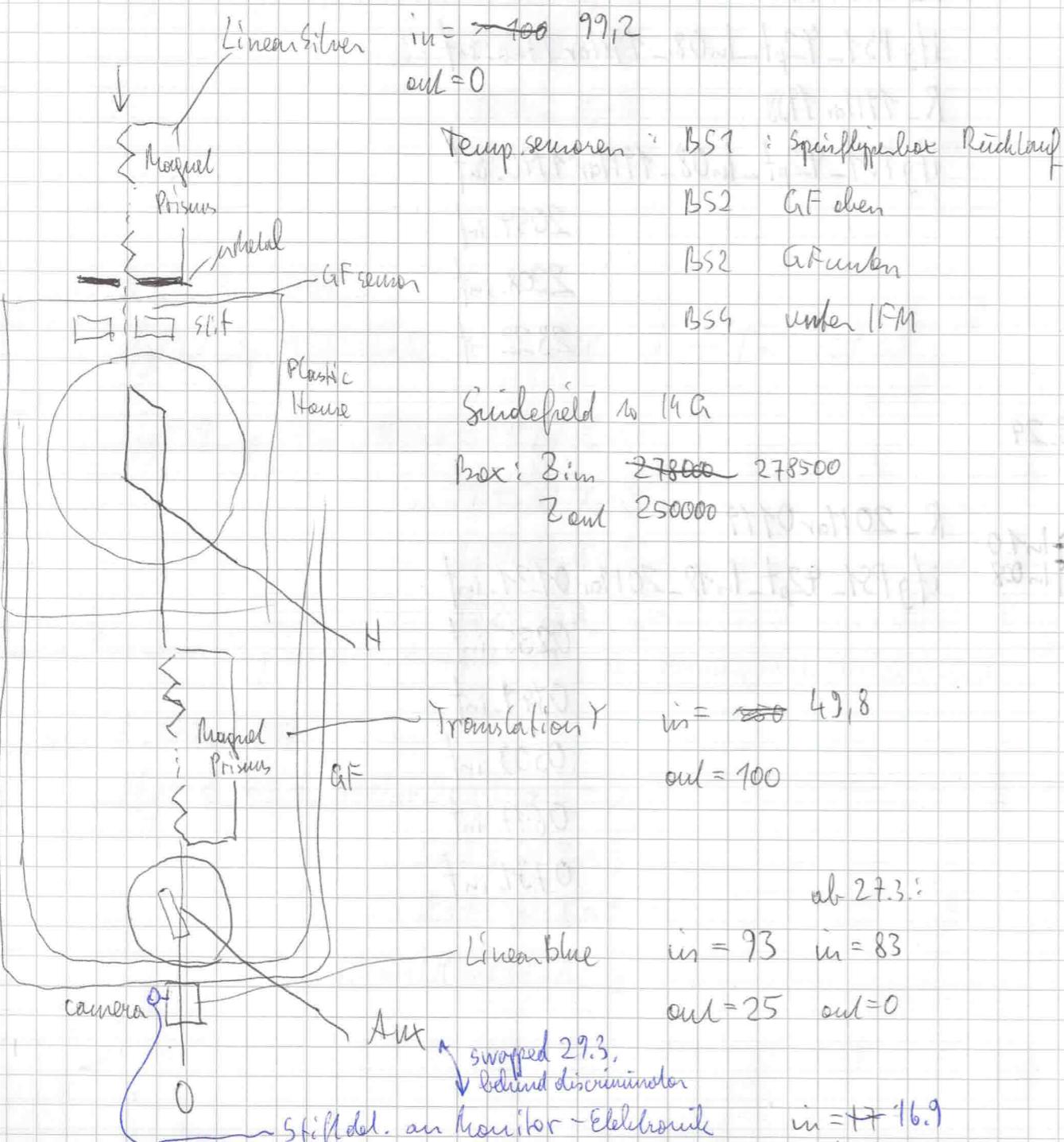
$\text{In } 1.0$ $\text{In } 0.8$ $R - 20 \text{ Mar } 0119$
 $\text{ifg PS1-42pt-In18-20Mar0121.inf}$
 $0235.inf$
 $0349.inf$
 $0503.inf$
 $0617.inf$
 $0731.inf$

21.3.24

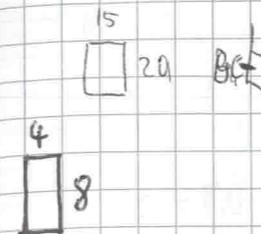
34

R_21Mar0855

ifg PS1-42pt-noln-21Mar0857.inf
 ifg PS1-42pt-noln-21Mar1011.inf



35

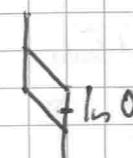


R_21Mar1751

ifg PS1-42pt-noln-BoxIn-21Mar1752.inf
 ifg PS1-42pt-noln-BoxOut-21Mar1906.inf

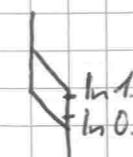
R_21Mar2037

ifg PS1-42pt-noln-BoxIn-21Mar2038.inf
 ifg PS1-42pt-noln-BoxOut-21Mar2152.inf



R_21Mar2326

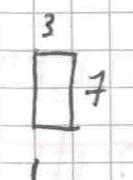
ifg PS1-42pt-1608-BoxIn-21Mar2329.inf
 ifg PS1-42pt-1608-BoxOut-22Mar0043.inf



R_22Mar0815

ifg PS1-42pt-1618-BoxIn-22Mar0817.inf
 ifg PS1-42pt-1618-BoxOut-22Mar0932.inf

22.3.24

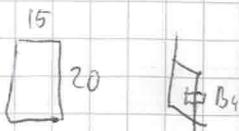


R_22Mar1229

ifg PS1-42pt-1618-BoxIn-22Mar1231.inf
 ifg PS1-42pt-1618-BoxOut-22Mar1345.inf

36

Justage Braggprismen



2. Adlze R - 22 Mar 1958

peak bei 0,9322

3. Adlze R - 22 Mar 1958

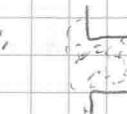
peak bei -159,1913
2687

Analysen auf 46

3. Adlze R -
1655
1658

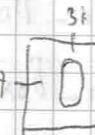
sep. 0,0012

mit Camera:



Schatten der Prismen

Kamera-Bilden: alignment-beam 4x8.1.f



box:

alignment-box 0.k.f



o.k., aber zu weit links

Robot Y von 75500 auf 74500, 1mm nach rechts.

alignment-box 1.k.f

Robot Z von 27800 auf 279000, 1mm rüber

box 2.k.f

auf 0.01 278500

box 3.k.f

Analysen: (Box raus)

Transl.Y=50 alignment-analy 0.k.f



1mm ↑, 8mm Unterlage

analy 1.k.f

1mm ↑, 9mm Unterlage - gleich (?)

analy 2.k.f

1mm ↑, 10mm Unterlage

analy 3.k.f

R - 22 Mar 1958 wenig Intens. im Aux

S-dose der 3. Adlze

S

FWHM aux

in 2s

16,78	0,000497	1177
16,82	451	1367
16,86	397	1372
16,90	444	1107
16,84	471	682
roding 2.A., Pl.SL opt.	438	1082
16,84	42	5773
16,88	37	5219
16,80	504	5039
16,86	1378	5490

Analysen TranslY=50 sep. 0,0012

Polarizer-Linse:

alignment-polar 0.k.f

1mm rüber, 4mm Spacer
3.k.f

38

4

8

ifg Temperatur Box - 22 Mar 1951.inf → stopped due to error in rocking.sc

23.3.24

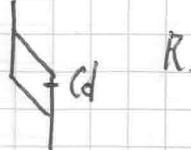
ifg Temperatur Box - 23 Mar 1952.inf → The water pump didn't work!

37

24.3.24

38

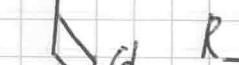
O @ 600s H @ 600s

 R_24Mar1623 121.375 153.027

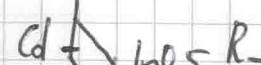
 R_24Mar1645 96.086 257.932

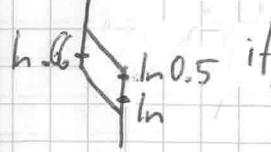
 R_24Mar1809 262.700 363.169

 R_24Mar1809 93.802 260.563

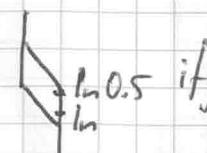
 R_24Mar1809 124.156 150.035

 R_24Mar2207 70.001 93.736

 R_24Mar2224 59.192 149.095

 R_24Mar2318.inf ifg PS1-42pt-Ln086-12-24Mar2318.inf

25.3.24

 R_24Mar1247.inf ifg PS1-42pt-Ln086-2_BoxIn-25Mar1247.inf

15

B4C

S der dritten Schleife

S	FWHM Aux	in Rs	O+H+Aux
16,86	0,000435	1521	6635
16,90	529	1203	6633
16,82	459	1548	6702
16,78	547	1271	6653
16,84	355	1545	6698

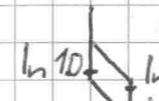
L8

mag Poisn 2 pos ... 25Mar1541

→ 49,8 Traul.Y

mag Poisn 1 pos ... 25Mar1726

→ 99,2 hin.Silber

 R1_25Mar2032
ifg PS1-42pt-Ln10-12_BoxIn-25Mar2032.inf

R1_25Mar2114

ifg PS1-42pt-Ln10-12_BoxOut-25Mar2114.inf

ifg Temperatur Box-25Mar2158.inf → 23,58 °C ~ 23,55 °C

Normal set temp: 657 °C max. couch.

23,0	23,37
23,1	23,38
23,2	23,46
23,3	23,54
23,4	23,61
23,5	23,69
23,6	23,77
23,7	23,85
23,8	23,93
23,9	24,01

{ max. 73%

48 mit Box, 23,55°C, beide Pfade offen

40 Mag. 1 in, R1-26Mar0947, 10 Peak 1 Peak 2
0,931472 0,932918

R2 - 26Mar0955 nur noch ein Peak, -15°, 2684498

Mug. 2 darin

R-2-26Mar10009 crystal 2 in Peak

R1 - 26Mar1013 2 Peaks in H, 1 Peak in Aux

Col in path 1 (in Box)

R1 - 26Mar1020

10 Peak 1 Peak 2
0,931478 0,932934

R2 - 26Mar1030

peak bei -15°, 269



R1 - 26Mar1035

2 Peaks in H, einer in Aux



R2 - 26Mar1040

-15°, 2691

-15°, 2695

-15°, 2693

-15°, 2692

lange Kettent.

R1 - 26Mar1044

Aux in H zerstreut, 0 flach

Peak 1 Peak 2

0,931471 0,932928

R1 10 peak 2,

R2 - 26Mar1105

→ nur mehr ein Peak in H, -15°, 266

lange Kettent.

R1 - 26Mar1119.

polarised neutrons

48 R1 - 26Mar1152

ifg PS1-42pt-In08-2-BoxIn-Pol-26Mar1157.inf

polarised neutrons

48 R1 - 26Mar1501

ifg PS1-42pt-In08-1-BoxIn-Pol-26Mar1508.inf

48 R1 - 26Mar1623

ifg PS1-42pt-In08-1-BoxIn-26Mar1625.inf

48 R1 - 26Mar1746

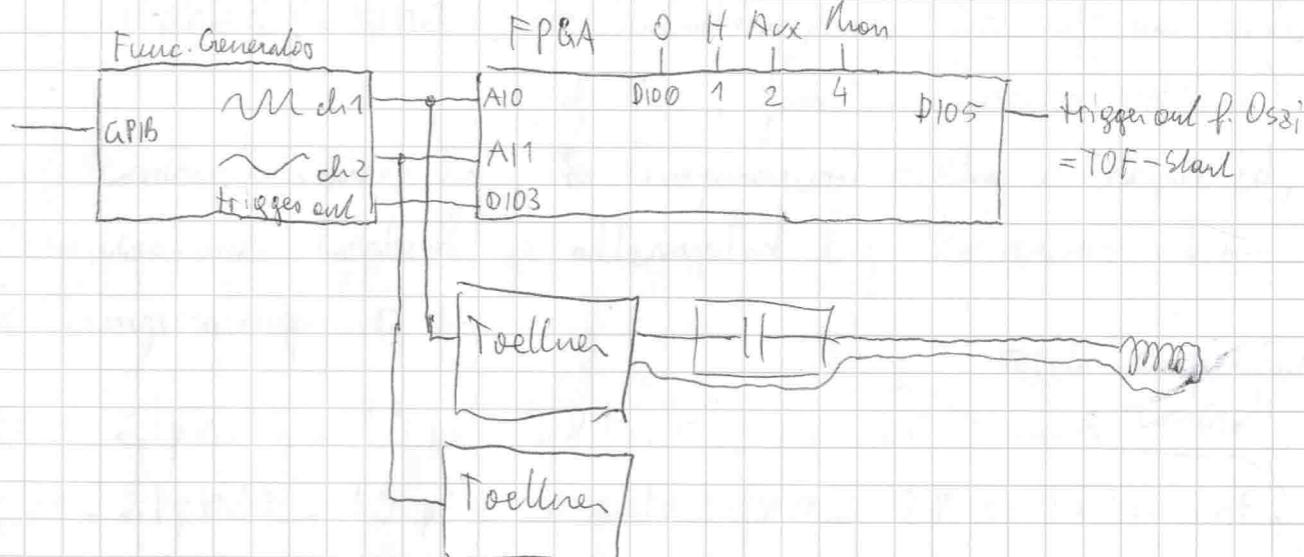
ifg PS1-42pt-In08-2-BoxIn-26Mar1749.inf

41

ifg Temperatur Box - 25Mar1813.inf → ≈ 23,6°C aber letzter Punkt fehlt

26Mar0823.inf ab 23,6°

FPGA - Setup wie 27.10.23, CRG - 3061



Pencil detector mounted on LinearBlue (next to camera), ~16

connected to Mon electronics, HV: old = 2780 V

new = 1721 2350 V

signal: old: TTL, direct to "M CH2"

new: analog, to QuadSCA ch.4
LL = 0,3 V UL = 10 V

Pencil Detector - 27Mar1707 → (17)
16.9

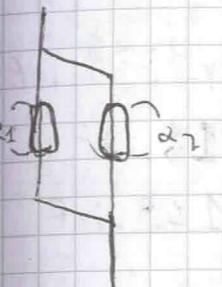
29.3.: Pencil-Det connected (behind discriminator) with Aux - input,
Aux with Mon - input
because of FPGA - Coding

28.3.24

CALIBRATION OF α_1 AND α_2

43

$$\lim_{T \rightarrow \infty} \frac{1}{T} \int_{t_1}^{t_1+T} I(x, t) dt = \frac{1}{2} + \frac{1}{2} J_0(\alpha_1) J_0(\alpha_2) \cos \chi \Rightarrow$$

 \Rightarrow CONTRAST $\propto J_0(\alpha_1) J_0(\alpha_2)$ 

iPg-vs-alpha1(alpha2) → Interferograms for different values of V_{cc} (function generator voltage).

Loss of contrast due to temperature rising is expected, so temperature control is attempted by lowering the water temperature $\propto V_{cc}$.

iPg-vs-alpha2 - 19 pt - 28 Mar 1346.inf
 iPg-vs-alpha2 - 19 pt - stabletemp - 28 Mar 1834.inf
 iPg-vs-alpha2 - 19 pt - risingtemp - 28 Mar 2200.inf
 iPg-vs-alpha2 - 19 pt - stabletemp - 28 Mar 0607.inf

with Temperature control

te
29.3.24

Temperature effects are noticeable after the second zero of the Bessel function. Temperature control is not working, we try to improve it by studying DC scans.

iPg-vs-DC1 → Interferograms for different DC values.

iPg-vs-DC1 - 29 Mar 1050.inf

There seem to be a quadratic dependence between contrast and temperature. Temperature correction is not needed, we drop it.

30.3.2024 ifg-vs-3lph31-20pt-risingtemp-29Mar2208.inf
 44 ifg-vs-3lph32-20pt-risingtemp-30Mar0544.inf

Wrong range for α_1 scan, changed. Additionally, rocking angles are constant, rocking curves are not needed. $w_1 = w_2 = 2\pi \cdot 3\text{kHz}$

ifg-vs-3lph31-20pt-risingtemp-no-rock-30Mar1331.inf
 ifg-vs-3lph32-20pt-risingtemp-no-rock-30Mar1833.inf
 ifg-vs-3lph31-20pt-risingtemp-no-rock-30Mar2149.inf

The last 2 measurements are good, they're used to obtain α_1 and α_2 .

$$\alpha_{1,2} = \frac{\pi}{16} \leftrightarrow zm_1 = 0.278\text{V} \quad zm_2 = 0.172\text{V}$$

$$\alpha_{1,2} = \frac{\pi}{8} \leftrightarrow zm_1 = 0.556\text{V} \quad zm_2 = 0.343\text{V}$$

$$\alpha_{1,2} = \frac{\pi}{4} \leftrightarrow zm_1 = 1.112\text{V} \quad zm_2 = 0.686$$

$$\alpha_{1,2} = 2.4048 \leftrightarrow zm_1 = 3.405\text{V} \quad zm_2 = 2.102$$

\uparrow
 $J(\alpha) = 0$

31.03.2024

Try to estimate $C(\alpha_1, \alpha_2)$ ($constant = C$)

ifg-vs-3lph31+3lph32-20pt-risingtemp-31Mar0114.inf
 ($w_1 = w_2$)

ifg-vs-3lph31+3lph32-20pt-risingtemp-no-rock-31Mar2137.inf
 ($w_1 \neq w_2$)

ifg-vs-3lph31-20pt-risingtemp-no-rock-31Mar1801.inf

~~ifg-vs-3lph31-20pt-risingtemp-no-rock-31Mar1801.inf~~

01.4.2024

ifg PS1-2p-22pt-01Apr0418.inf

01.4.2024 ifg-PS1-2p-22pt-01Apr0429.inf
 TOF-vs-chi-3lph32-22pt-pi16-1200s-01Apr0439.inf
 ifg-vs-3lph31-20pt-risingtemp-no-rock-01Apr1455.inf
 We measure $C(\alpha_1, \alpha_2)$, with $\alpha_2 = K\alpha_1$ ($K = \text{const}$) $\star 2\text{kHz}$
 ifg-vs-3lph31x3lph32-14pt-risingtemp-no-rock-01Apr1912.inf
 ifg PS1-2p-22pt-01Apr2138.inf
 ifg PS1-2p-22pt-01Apr2148.inf
 TOF-vs-chi-3lph32-22pt-Bessel-0-1200s-01Apr2251.inf

02.4.2024

ifg PS1-2p-22pt-02Apr0615.inf

ifg PS1-2p-22pt-02Apr0625.inf

TOF-vs-chi-3lph31-22pt-pi4-1200s-02Apr0634.inf

We try to work at 15 kHz to reduce current (wrong assumption)

ifg-vs-alpha...15kHz...inf \leftarrow useless

B4C Aux out R-02Apr1536 Box out
 PS2 out: R-02Apr1654

COUNT 600s	PS2 out
0 = 47577	49735
H = 127668	134233
AUX = 717	784
MOR = 86	104

B4C Aux out R-02Apr1601 Box out
 PS2 out: R-02Apr1636

COUNT 600s	PS2 out...
0 = 53704	62955
H = 80590	84740
AUX = 810	763
MOR = 108	112

15
46 20 camera in (linBlue=83)

R1-02Apr1717
intensity-pall2-02Apr1726.tif

B₄C R1-02Apr1736
intensity-pall1-02Apr1746.tif

8 cam.out, Pencillet in, 16.9

The capacitor boxes have been changed and changed back, we tried to work at different frequencies (higher) and it didn't improve the setup. We run a quick ifg-vs-alpha1 to make sure everything is back to normal

ifg-vs-alpha1-9pt-2kHz-no-rock-02Apr1838.inf

Everything seems back to normal, starting weak value measurements

~~ifg PS1-2P-22pt-02Apr2031.inf~~

~~ifg PS1-2P-22pt-02Apr2032.inf~~

~~TOF-vs-chi-alpha1-22pt-Bessel-0-2kHz-1200s-02Apr2041~~

~~ifg PS1-2P-22pt-02Apr2041~~

03.4.2024

~~ifg PS1-2P-22pt-03Apr0405.inf~~

~~ifg PS1-2P-22pt-03Apr0426.inf~~

~~TOF-vs-chi-alpha1-22pt-14-2kHz-1200s-03Apr0436~~

Working at 2kHz might be better, we run ifg-vs-alpha2

~~ifg-vs-alpha2-9pt-2kHz-no-rock-03Apr1211.inf~~

We try to solve the Indium problem again

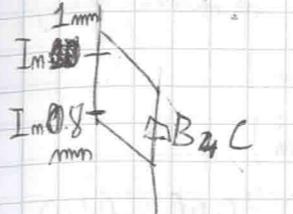
B₄C BOX OUT (counts 600s)

0 = 58699
H = 87144
AUX = 436
MOR = 99

BOX IN (counts 600s)

0 = 57770
H = 87827
AUX = 775
MOR = 127

robot2-03Apr-1506



BOX OUT
COUNTS 600s

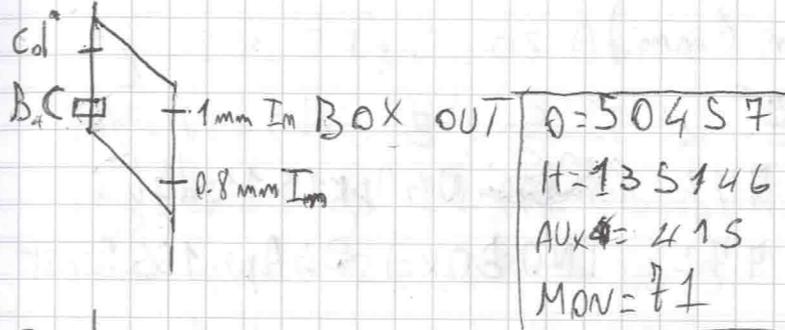
<input type="checkbox"/> B ₄ C	Z = 277800.
0 = 63018	
H = 85281	
AUX = 676	
MOR = 30	

<input type="checkbox"/> B ₄ C	Z = 17683
H = 21730	
AUX = 673	
MOR = 76	

0 = 64018

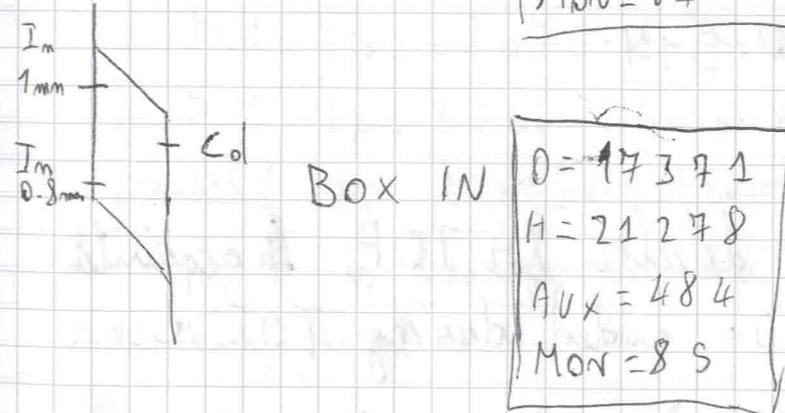
BOX IN H = 21934 BOX OUT
AUX = 441
MOR = 86

*BOX



<input type="checkbox"/> B ₄ C	0 = 50457
-1mm In	BOX OUT
-0.8mm In	

<input type="checkbox"/> B ₄ C	0 = 50892810
	32095



<input type="checkbox"/> B ₄ C	0 = 17371
Box IN	H = 21278
	AUX = 484
	MOR = 8 S

ifg PS1-2P-22pt-03Apr1953.inf
to check if Cd is working,
we get C = 0

ifg PS1-2P-22pt-03Apr1953.inf ~~BOX OUT C = 0.74~~
ifg PS1-2P-22pt-03Apr2002.inf Box IN, Im 1.8mm C = 0.41
ifg PS1-2P-22pt-03Apr2023.inf Box OUT C = 0.76
ifg PS1-2P-22pt-03Apr2033.inf Box IN, Im 1.8mm C = 0.41
ifg PS1-2P-22pt-03Apr2055.inf ~~(maybe) Box IN Im 18mm C = 0.44~~
ifg PS1-2P-22pt-03Apr2110.inf Box IN, No IN OUT C = 0.62

B₄C BOX OUT (counts 600s)

0 = 58699
H = 87144
AUX = 436
MOR = 99

BOX IN (counts 600s)

0 = 57770
H = 87827
AUX = 775
MOR = 127

ifg PS1-2P-22pt-03Apr2146.inf (Im 1mm)
TOF-vs-chi-alpha1-22pt-Bessel-0-2kHz-03Apr2207.inf
(Im 1mm)

04.4.2024

48

Contrast and phase not stable over night (I_m 1mm)

$iFgPS1-2p-22pt-04Apr0531.inf$ (I_m 1mm)

$iFgPS1-2p-22pt-04Apr0622.inf$ (I_m 1mm)

$TOF_vs_chi_z1phz1-22pt-Bessel-0-2kHz-1200s-04Apr0643$

$iFgPS1-2p-22pt-04Apr1412.inf$ (I_m 1mm) (I_m 1mm)

$iFgPS1-2p-22pt-04Apr1426.inf$ (~~BOX OUT~~ NO I_m)

The contrast ratio $I_m/No I_m$ it's still too high. Running a temperature check →

$rocking-04Apr1444.inf$ (I_m 1mm)

NEW TEMPERATURE → 23.9°

CONTRAST IN DUM 1mm = 0.714 ~~04Apr1511.dzt~~

CONTRAST NO IN DUM = 0.772 (NO BOX) ~~04Apr1559.dzt~~

$$\frac{C_I}{C} \approx 0.326 \quad \left| \frac{C_I}{C} \right| = 0.917$$

C expected

~~Bad Readout~~

We use ~~the~~ only the O-detector for TOF, acquisition time reduced to 900s. IFGs added during TOF vs chi.

~~TOF-vs-chi-iFg-z1phz2-22pt-Bessel-0-2kHz-900s-04Apr1634.inf~~

$iFgPS1-2p-22pt-04Apr2237.inf$ (Box OUT, $C=0.80$)

$iFgPS1-2p-22pt-04Apr2306.inf$ (Box IN, $C=0.67$)

$iFgPS1-2p-22pt-04Apr2327.inf$ (Box OUT, $C=0.78$)

$iFgPS1-2p-22pt-04Apr2338.inf$ (Box IN, $C=0.67$)

Change Indium to front

05.4.2024

$iFgPS1-2p-22pt-05Apr0004.inf$ (Box IN, $C=0.65$)

$iFgPS1-2p-22pt-05Apr0024.inf$ (Box IN, $C=0.66$) 49

TEMP BOX $23.9^\circ \rightarrow 23.8^\circ$

$iFg-2P-22pt-05Apr0045.inf$ (Box IN, $C=0.66$)

$TOF_vs_chi_z1phz2-22pt-Bessel-0-2kHz-900s-05Apr0055.inf$

$iFg-2P-22pt-05Apr0628.inf$ (Box IN, $C=0.65$)

$iFg-2P-22pt-05Apr0638.inf$ (Box OUT, $C=0.77$)

TEMP BOX $23.8^\circ \rightarrow 23.9^\circ$

$iFg-2P-22pt-05Apr0658.inf$ (Box IN, $C=0.65$)

TEMP BOX $23.9^\circ \rightarrow 23.8^\circ$

$iFg-2P-22pt-05Apr0720.inf$ (Box IN, $C=0.64$)

$TOF_vs_chi_z1phz1-22pt-Bessel-0-2kHz-900s-05Apr0730.inf$

$iFgPS1-2p-22pt-05Apr1303.inf$ (Box IN, $C=0.64$)

TEMP BOX $23.8^\circ \rightarrow 23.9^\circ$

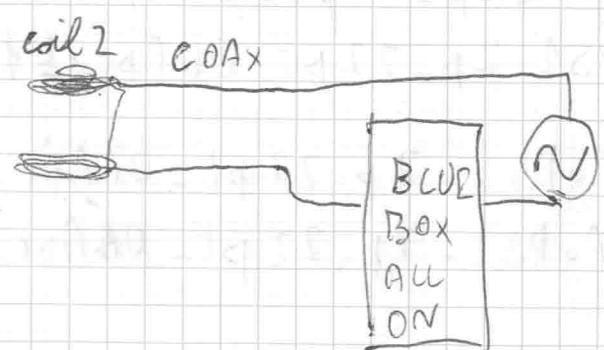
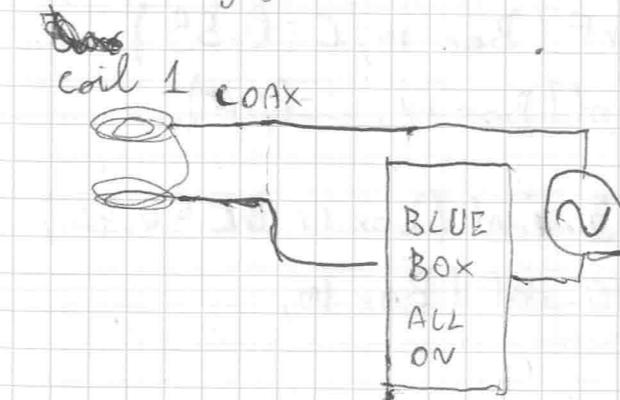
$iFg-PS1-2p-22pt-05Apr1323.inf$ (IN?, $C=0.53$)

$iFg-PS1-2p-22pt-05Apr1341.inf$ (IN?, $C=0.60$)

$iFg-PS1-2p-22pt-05Apr1359.inf$ (Box OUT, $C=0.74$)

• Coil 2 is heating too much, probably a bad connection.

New configuration:



COAX 7 is DEFECTIVE

$iFgPS1-2p-22pt-05Apr1805.inf$ (Box OUT, $C=0.74$)

$iFgPS1-2p-22pt-05Apr1926.inf$ (Box IN, $C=0.64$)

$iFg-vs-z1phz1-12pt-2kHz-no-rock-05Apr1946.inf$

Ind
1mm

50

(old $V_1 = 5.313$)

$$\omega_1 = 2.4048 \leftrightarrow V_1 = 5.155, 2\text{kHz}$$

ifg PS1-2P-22pt-22pt-05 Apr 2144.inf (Box IN, C=0.45)

Multimeter sets the wrong temperature, fixed it (23.8°)

TOF-vs-z1phz2-12pt-2kHz-no-rock-05 Apr 2204.inf

$$\omega_2 = 2.4048 \leftrightarrow V_2 = 5.372, 2\text{kHz} \quad (\text{old } V_2 = 3.343)$$

New temp box $\rightarrow 24.0^\circ$

ifg PS1-2P-22pt-06 Apr 0044.inf (Box IN, C=0.64)

ifg PS1-2P-22pt-06 Apr 0105.inf (Box OUT, C=0.74)

ifg PS1-2P-22pt-06 Apr 0125.inf (Box , C=0.65)

TOF-vs-chi-z1phz1-22pt-Bessel-0-2kHz-800s-06 Apr 0135

ifg PS1-2P-22pt-06 Apr 0709.inf (Box IN, C=0.64)

ifg PS1-2P-22pt-06 Apr 0730.inf (Box OUT, C=0.75)

ifg PS1-2P-22pt-06 Apr 0751.inf (Box IN, C=0.61)

TOF-vs-chi-z1phz1-22pt-Bessel-0-2kHz-800s-06 Apr 0800.inf

Labview crashed, last point repeated

TOF-z1phz1-Bessel-0-2kHz-800s-06 Apr 1433.inf

ifg PS1-2P-22pt-06 Apr 1450.inf (Box IN, C=0.59)

ifg PS1-2P-22pt-06 Apr 1514.inf (Box IN, C=0.64)

No ifg PS1-2P-22pt-06 Apr 1539.inf (Box IN, C=0.74)

Im ifg PS1-2P-22pt-06 Apr 1600.inf (Box IN, C=0.73)

TEMP Box SCAN(Box IN):

temperature Box-06 Apr 1620.inf ($T=24.1, C=0.72$)temperature Box-06 Apr 1628.inf ($T=24.0, C=0.74$)temperature Box-06 Apr 1639.inf ($T=23.9, C=0.72$)

ifg PS1-2P-22pt-06 Apr 1714.inf (Box OUT, C=0.74)

ifg PS1-2P-22pt-06 Apr 1807.inf (Box IN, C=0.73)

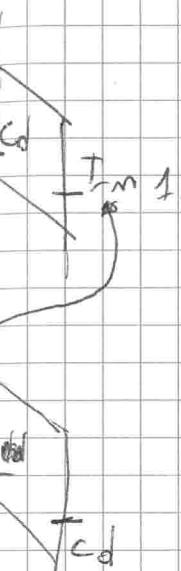
51

ifg PS1-2P-22pt-06 Apr 1907.inf (Box IN, C=0.63)

ifg PS1-2P-22pt-06 Apr 1829.inf (Box IN, C=0.64)

ifg PS1-2P-22pt-06 Apr 1841.inf (Box IN, C=0.65)

ifg PS1-2P-22pt-06 Apr 1851.inf (Box IN, C=0.63)



O = 12281
H = 31034
AUX = 294
MON = S1
t = 300s

O = 25413
H = 68555
AUX = 304
MON = G2
t = 300s

O = 32450
H = 43212
AUX = 290
MON = S8
t = 300s

O = 32450
H = 43212
AUX = 290
MON = S8
t = 300s



ifg PS1-2P-22pt-06 Apr 2106.inf (Box OUT, C=0.72)

ifg PS1-2P-22pt-06 Apr 2126.inf (Box IN, C=0.64)

ifg PS1-2P-22pt-06 Apr 2147.inf (Box OUT, C=0.74)

ifg PS1-2P-22pt-06 Apr 2208.inf (Box OUT, C=0.72)

ifg PS1-2P-22pt-06 Apr 2229.inf (Box IN, C=0.64)

ifg PS1-2P-22pt-06 Apr 2243.inf (Box IN, C=0.64)

TOF-vs-chi-z1phz1-22pt-Bessel-0-2kHz-800s-06 Apr 2259.inf

07.4.2024

ifg PS1-2P-22pt-07 Apr 0433.inf (Box IN, C=0.60)

ifg PS1-2P-22pt-07 Apr 0453.inf (Box IN, C=0.63)

ifg PS1-2P-22pt-07 Apr 0514.inf (Box OUT, C=0.77)

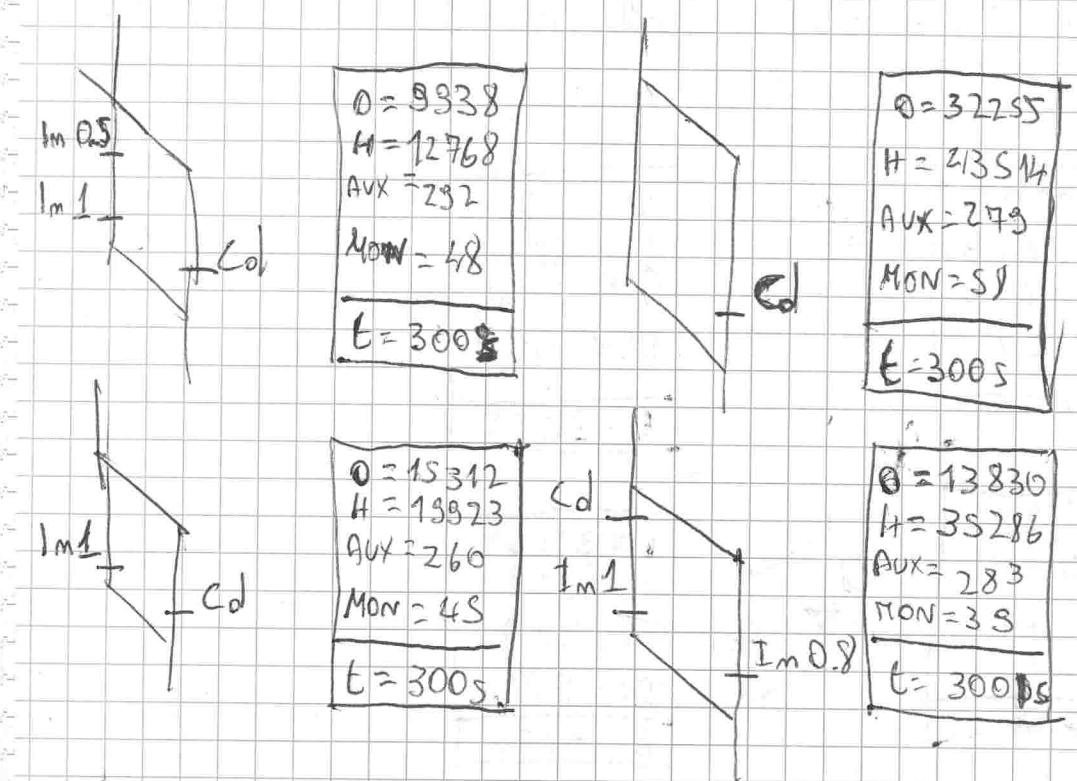
07.4.2024

ifg PS1 - 2p - 22pt - 07 Apr 0556.inf (Box IN, C=0.63)

52

TOF-vs-chi-ifg-31ph32-22pt-Bessel_0_2KHz-900s-07Apr
ifg PS1 - 2p - 22pt - 07 Apr 1209.inf

0605



ifg PS1 - 2p - 22pt - 07 Apr 1537.inf (Box IN, C=0.65)

ifg PS1 - 2p - 22pt - 07 Apr 1558.inf (Box IN, C=0.66)

ifg PS1 - 2p - 22pt - 07 Apr 1622.inf (Box OUT, C=0.77)

I_m 1
I_m 0.8
I_m 0.5
I_m 1
I_m 0.8

ifg PS1 - 2p - 22pt - 07 Apr 1648.inf (Box IN, C=0.53)

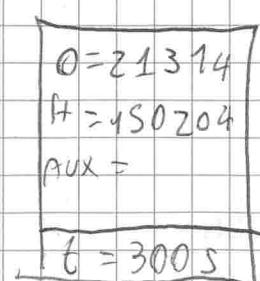
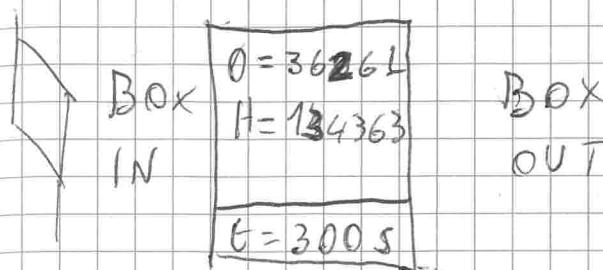
ifg PS1 - 2p - 22pt - 07 Apr 1708.inf (Box IN, C=0.53)

BOX IN

O=472950
H=128488
AUX=246
MON=35
T=300s

BOX OUT

O=24493
H=146817
AUX=285
MON=44
T=300s



53

Robot 2 SCAN, NEW POSITION 2780

in 1.0 + 0.8 in path I

box out, reading R-7 Apr 194, ifg PS1... 7 Apr 1925

1934 1945

box in

1955 2006

2016

2027 *

TOF-vs-di-alpha 1-22pt-Bessel_0_2KHz-1200s-07Apr 2037.inf

reading R-8 Apr 040 ifg PS1... 0400
0421

box out

0431 0442

box in

0452 0503

0513 0524

TOF-vs-di-alpha 2...

reading R-8 Apr 1307 ifg PS1 1257
1318

box out

1328 1339

box in

1349 1400

08Apr 0533.inf

ifg-PS1-2p-22pt-300s-08Apr 1537.tif Test of homogeneity of phase of indium plates
box out → phase gradient, 56% locally, 18% integrated

ifg-PS1-2p-22pt-300s-08Apr 1756.tif

→ no phase gradient, 74%

see indium contrast camera.pdf

54

repeat of last night:

	rocking	ifg-PS1	TOF vs. dii
box out	8 Apr 1950	8 Apr 2007	
	2011	2022	
box in	2032	2043	
	2053	2104	$\alpha_2 \dots 0.8 \text{ Apr } 2114$
			9 Apr 0437
			9 Apr 0447
box out	0508	0519	
box in	0529	0540	
	0550	0601	$\alpha_1 \dots 0.9 \text{ Apr } 0611$
			stopped at 12:00

Box-Waterpump turned off

ifg-PS1-2p-22pl-09Apr1216.inf

box out, R-09Apr1400

box in, camera in, 3^{+10}_{-10} 1mm In in path 1

ifg-PS1-2p-22pl-300s-09Apr1414.inf

phase homogenous, $C = 0,69$

box out, camera out

ifg-PS1-2p-22pl-09Apr1659

~~7,5 ln in path II~~

Lithium out, box in : R- 09Apr1736, ifg-PS1-2p-22pl-09Apr1737 73,4%

In 1.0 + 0.5 in path II, camera IN

ifg-PS1-2p-22pl-300s-09Apr1750.inf

horizontal phase gradient, local contrast 52%, global 51%

$$\text{pg. 52 top; } \alpha_2 = \sqrt{\frac{15312}{32255}} =$$

$$\alpha_1 = 1, \quad \alpha_2 = 0,69$$

$$C = \frac{2\alpha_1\alpha_2}{\alpha_1^2 + \alpha_2^2} = 0,934$$

$$C_0 = 0,74$$

$$C \cdot C_0 = 0,69$$

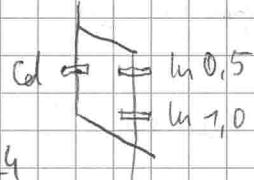
1,0 + 0,5 mm In

Box temperature to 24,2°C

ifg - 09Apr1944

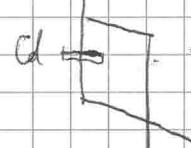
rocking
box out 9 Apr 1954
9 Apr 2005box in 9 Apr 2015
9 Apr 2026
2036
204710 Apr 0230
10 Apr 0240
0251box out 10 Apr 0301
10 Apr 0312box in 10 Apr 0322
10 Apr 0335
0343
035910 Apr 1028
10 Apr 1038
1049box out 1059
1110

Aux, then disconnected for n-background tests (see pg 56-57)



10.4.24

$$\begin{array}{|c|} \hline O = 8108 \\ H = 19615 \\ t = 300s \\ \hline \end{array}$$



$$\begin{array}{|c|} \hline O = 24274 \\ H = 78254 \\ t = 300s \\ \hline \end{array}$$

temperature Box - Scan: $T = 24,1$

all open
rocking 10 Apr 1717
temp. box 1720

 $\rightarrow 24,2^\circ\text{C}$

peak: 0,93274 - const.

In 0.5
In 1.0 repeat from last night

 $\rightarrow \text{pg } 58$

55

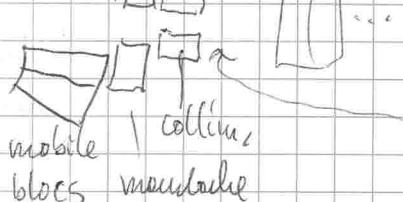
Hooke-Pump was sealed off on standby

56

10.4.24. Test of fast neutron background

Detector von Michael / Oliver

Monochr.



sec Aux Mon beam B₄C Polyeth. B₄C

100 653 582 off - -

10 439953 429093 on - -

100 1484 1739 on - 1x ~~stetig~~ groß 5cm dicht

100 118 84 off - -

100 1237 944 on - 1x ~~stetig~~ krümm 5cm dicht

100 147 95 off - -

100 1745 1373 on - 1x klein 5cm dicht

100 93 282 off - -

100 1769 1392 on - -

100 1103 814 on - 1x krümm

100 91 57 off - -

100 118 69 off - -

100 1764 1426 on -

100 96 63 off - -

100 349 84 on 1x groß -

100 315 112 1x 5cm weiß -

100 242 67 1x 10 cm -

100 259 88 1x 15 cm -

100 313 84 1x 5cm gelb -

100 259 81 1x 10 cm gelb -

100 232 74 1x 20 cm gelb -

100 1682 1505 1x 20 cm 0

100 1900 1725 10 cm 0

100 1954 1745 5 cm 0

100 2714 2926 0 0

7.2 kV, analog out, discr. 0.5 V

→ Mon

discr. out

→ Aux

Det.

B₄C

beam

TTL analog

sec	Aux	Mon	beam	B ₄ C	Polyeth.	B ₄ C
100	598	331	on	1x	5cm gelb	0
	444	2250			10 cm	
	400	198			20 cm	

100 2149 1884

en, Det. nahe an mobile blocks die geöffneten sind
offen in Richtung D23
Det. zu

285 66

100 436 246

on 0 20 cm 0

6250 5787

10 cm

113842 107756

5 cm

6370482 4257703

0

100 407 180

on 1x 20 cm 0

461 217

10 cm

652 1345

5 cm

2968 2689

0

1197 908

0 0 1x

606 320

1x 5 cm SB 0

mono

poly eth. - rot - 11 Apr 2017

position 1

270 0-0 pos2 90

H-Det. in B₄C-Rohr,

Det. PE 50 mm

unterhalb B₄C

75 mm

es rollt ein Polyeth. block rundherum

180° pos1 90°

vgl. S. 16

180° pos2 90°

Thermohaus

⇒ PE sorgt für ein paar Thermoschichten, die von den Wänden kommen

rot auf 270 (wand), 300 s counting, beam on: 215 off: 159

poly eth. - rot - 11 Apr 2017

PE 50 75 flash

poly eth. - rot - quick - 11 Apr 2017

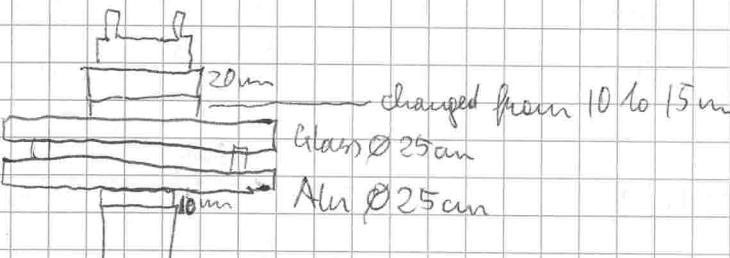
PE 50 on pos 2 flash

57

58

box out:	rocking ifg-PS1 10 Apr 1811
box in:	1831 1852
	1842 1903
	11 Apr 0047
	11 Apr 0056
box out:	0117
box in:	0138 0158
	0149 0209
	0753
box out:	0803
box in:	0823
	0844
	0857

lifting ifus by 5mm



box out	Polariser moved out, linear silver from 99,2 → 50 for S and P alignment
S	FWHM _H in 2s
5,66	0,00036 6713
5,70	0,00040 5562
5,62	0,000399 6972
5,58	0,000388 6312
5,63	0,00036 6953 (peak pos 0,495509)

Camera images:
(inlets-p2-unpol - 11 Apr 1514)
(inlets-p2-pol - 11 Apr 1522)(inlets-p1-pol - 11 Apr 1531)
(inlets-p1-unpol - 11 Apr 1538)(inlets-p2s-unpol - 11 Apr 1605)
(inlets-p2s-pol - 11 Apr 1548)

ohne rocking ausspannen

R-11 Apr 1602
0,495466 $I_2/I_1 = 0,77$
Path₂ / Path₁polarised,
R1-11 Apr 1612,
0,49618

inlets-p2s-pol - 11 Apr 1618

inlets-p1s-pol - 11 Apr 1627

inlets-p1-pol - 11 Apr 1636

inlets-p2-pol - 11 Apr 1643

camera out, ifg-PS1-3p-quick + 11 Apr 1656

camera ifgs with box out and box-in but empty

box out

box in

ifg-PS1-3p-300s - 11 Apr 1720

2305

0450

ifg-PS1-3p-300s - 11 Apr 2013

12 0158

ifg-PS1-2p-22pt-300s - 12 Apr 0905

Raizen IFM, for better balancing betw. path 1 & 2

S ungefähr, R - 12 Apr 1207, ifg mit cam. 300s, 12 Apr 1210, if

dired beam open

Manodis. lo gen kern, stahl etw. tiefer

IFM 5mm → und 2mm nach oben

S	FWHM _H	in 2s
13,5	0,000350	5541
13,46	352	6114
13,42	380	5869
13,38	402	515
13,415	345	6107

ifg-PS1-2p-22pt-100s - 12 Apr 1618

silicon zentriert, ~80%

59

 8, slit 1mm ←

60

Box nach Längs und Symmetrie zum IFM eingesetzt

2 Ph. Sch., je $\pm 4^\circ$

camera-in = 63

box max: 265500

robot 2 - 12 Apr 1744

out = 0

out 244000

1746

box in: 264000 (laser)

1748 → id 263500

box in, R1 - 12 Apr 1804, ifg PS1-3p-quich - 12 Apr 1806 73%

ifg PS2-3p-quich 1814 79%

empty box / box out

box in, rocking - 12 Apr 2205
out

13 Apr 0050 move PS2=0, ifg PS1-... 13 Apr 0103

90 0118
180 0147
270 0209

box out, rocking - 13 Apr 0224

in 0516 move PS2=0 ifg PS1-... 13 Apr 0528

90 0551
180 0606
270 0635

box in, rocking - 13 Apr 0650 move PS2=0 ifg PS1-... 13 Apr 0703

90 0725
180 0748
270 0810

box out, rocking - 13 Apr 0825 move PS2=0

90 0838
180 0900
270 0922
0945

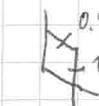
0.5 mm In box out, rocking - 13 Apr 1125, box in

move PS2=0 ifg PS1-... 13 Apr 1138
90 1200
180 1222
270 1244

box out, rocking 13 Apr 1300, box in

move PS2=0 ifg PS1-... 13 Apr 1558, 1906
90 1620
180 1928
270 1692
1950
1704, 2012

0.5 + 1.0 mm In.

 0.5 + 1.0 mm In. box out, rocking - 13 Apr 2113, box in

move PS2=0 ifg PS1-... 13 Apr 2126

90 2148
180 2210
270 2232

61

box out, rocking - 13 Apr 2248, box in,

ifg-PS1-3p-300s-13 Apr 2251

move PS2=0 ifg PS1-... 14 Apr 0146

90 0209
180 0231
270 0253

rock 14 Apr 0309

move PS2=0 ifg PS1-... 14 Apr 0322

90 0344
180 0406
270 0428

rock 14 Apr 0444

move PS2=0 ifg PS1-... 14 Apr 0742

90 0804
180 0826
270 0848

0.5 mm In.

rock 14 Apr 0916

move PS2=0 ifg PS1-... 14 Apr 0929

90 0951
180 1013
270 1035

rock 14 Apr 1051

move PS2=0 ifg PS1-... 14 Apr 1349

90 1411
180 1433
270 1455

rock 14 Apr 1511

move PS2=0 ifg PS1-... 14 Apr 1524

90 1546
180 1608
270 1630

rock 14 Apr 1646

ifg-PS1-3p-300s-14 Apr 1652

When taking out the In. 0.5 I noticed that it was not fully IN. A gap of ~1mm on the left. However, the camera IFG looks normal. Probably there was no ~~light~~ intensity on the very left anyway.

62

1mm Iridium

rock 14 Apr 2023

2041

move PS 0
90
180
270

i/g PS1 - cd - PS = 0 14 Apr 2023
i/g PS1 - 3 p - 300s - 14 Apr 2023.tif

2116	71%
2138	
2200	

at various PS2

rock 14 Apr 2216

move PS 0
90
180
270

i/g PS1 ... 15 Apr 0115

0130	
0159	67%
0221	

many PS2 files
are bad,
not reproducible
when re-fitting
dat files afterwards
(after restarting
CalView)

rock 15 Apr 0237

move PS 0
90
180
270

i/g PS1 ... 15 Apr 0250

0312	
0334	71%
0357	

CalView restart

rock 15 Apr 0412

move PS 0
90
180
270

i/g PS1 ... 15 Apr 0710

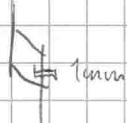
0732	
0754	68%
0817	

rock 15 Apr 0832

move PS 0
90
180
270

i/g PS1 ... 15 Apr 0845

0907	
0930	68%
0952	



rock 15 Apr 1007, 1037

move PS 0
90
180
270

i/g PS1 ... 15 Apr 1043 1050

1112	
1134	69%
1157	

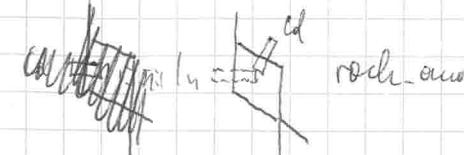
rock 15 Apr 1212

move PS 0
90
180
270

i/g PS1 ... 15 Apr 1225

1248	69%
1300	
1332	

63

rock_and_count*.dat, count
for 300s.

(0 ln 15 Apr 1437 0-Del 56057 H-Del 24546 0+H 140603)

Iridium	Time	cd in II, Iridium in I		cd in I, Iridium in II		Time	0-Del
		0-Del	H-Del	Sum	Time	0-Del	H-Del
0	1449	57079	83600	140679	1509	63441	131297
0,5	1611	39031	52903	91934	527	39190	85630
1,0	1624	28880	38193	67073	1542	27549	61694
1,5	1636	17072	26245	43317	1557	19747	37567
0,6 secoul	1702				1650	61462	132670
							194132

0,5 mm ln.

rock	PS	i/g
15 Apr 1718	0	1731
	90	17453
	180	1809
	270	1838
	1854	
		1907 ... 2016