

## TELBE beamtime: 07.12.2018 day shift

**Notebook:** Old TELBE Notebook (1)

**Created:** 07.12.2018 06:33

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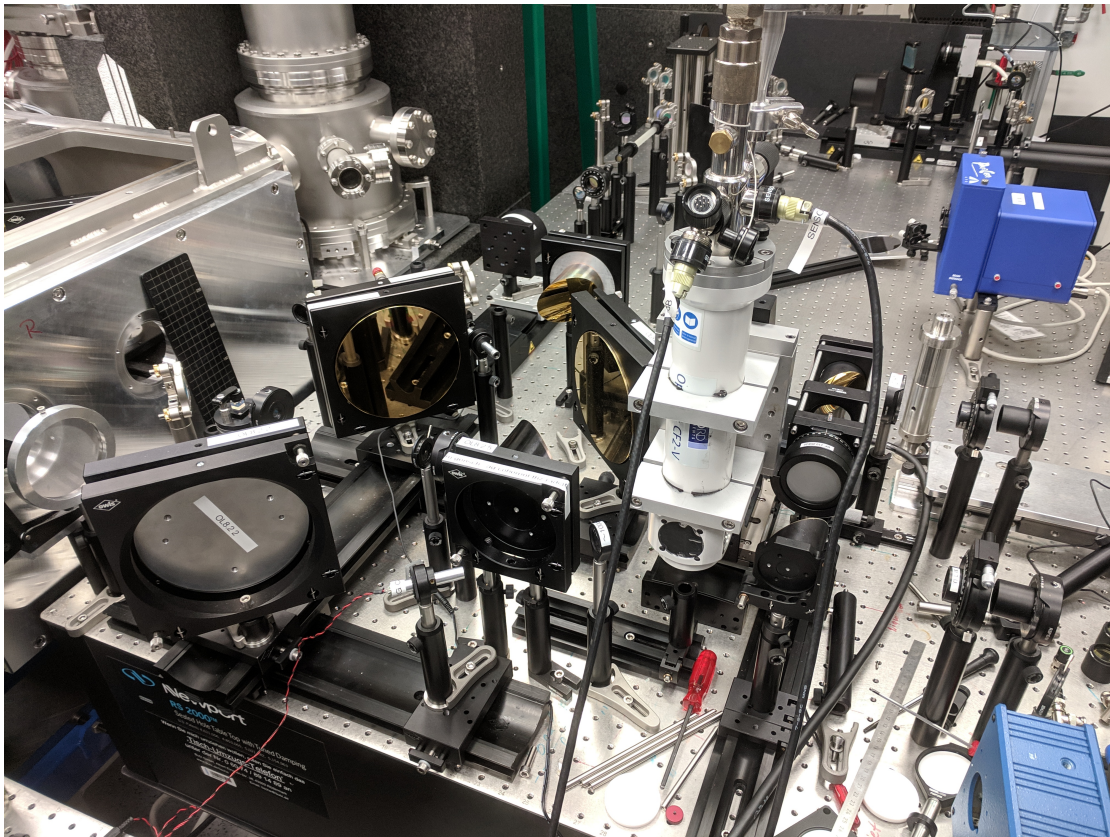
**Updated:** 07.12.2018 21:45

**Location:** 51°3'30 N 13°56'55 E

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JD

rotatable polarizer flipped out (max input fluence)



6:43

set temperature to 93 K

power BDA: 114 mW

temperature at beginning of measurement: 93.0 K

File: **23\_sample\_93p0K**

temperature at end of measurement: 93.7 K

7:03

set temperature to 90 K

power BDA: 114 mW

temperature at beginning of measurement: 90.2 K

File: **24\_sample\_90p2K**

temperature at end of measurement: 90.2 K

7:20

set temperature to 87 K

took new background for spectral decoding

power BDA: 114 mW

temperature at beginning of measurement: 86.8 K

File: **25\_sample\_86p8K**

temperature at end of measurement: 86.8 K

7:39

set temperature to 83 K

power BDA: 113 mW

temperature at beginning of measurement: 83.4 K

File: **26\_YBCO\_sample\_83p4K**

temperature at end of measurement: 83.3 K

8:02

set temperature to 80 K

power BDA: 110 mW

temperature at beginning of measurement: 80.0 K

File: **27\_YBCO\_sample\_80p0K**

temperature at end of measurement: 80.1 K

8:17

set temperature to 75 K

power BDA: 110 mW

temperature at beginning of measurement: 74.9 K

File: **28\_YBCO\_sample\_74p9K**

temperature at end of measurement: 75.0 K

8:35

set temperature to 70 K

power BDA: 112 mW

temperature at beginning of measurement: 69.9 K

File: **29\_YBCO\_sample\_69p9K**

temperature at end of measurement: 70.0 K

8:47

set temperature to 65 K

power BDA: 111 mW

temperature at beginning of measurement: 64.8 K

File: **30\_YBCO\_sample\_64p8K**

temperature at end of measurement: 64.9 K

9:04

set temperature to 40 K

power BDA: 107 mW

temperature at beginning of measurement: 39.8 K



File: **31\_YBCO\_sample\_39p8K**  
temperature at end of measurement: 40.1 K

9:20

set temperature to 20 K

power BDA: 107 mW  
temperature at beginning of measurement: 19.8 K  
File: **32\_YBCO\_sample\_19p8K**  
temperature at end of measurement: 19.7 K

9:39

set temperature to 81 K

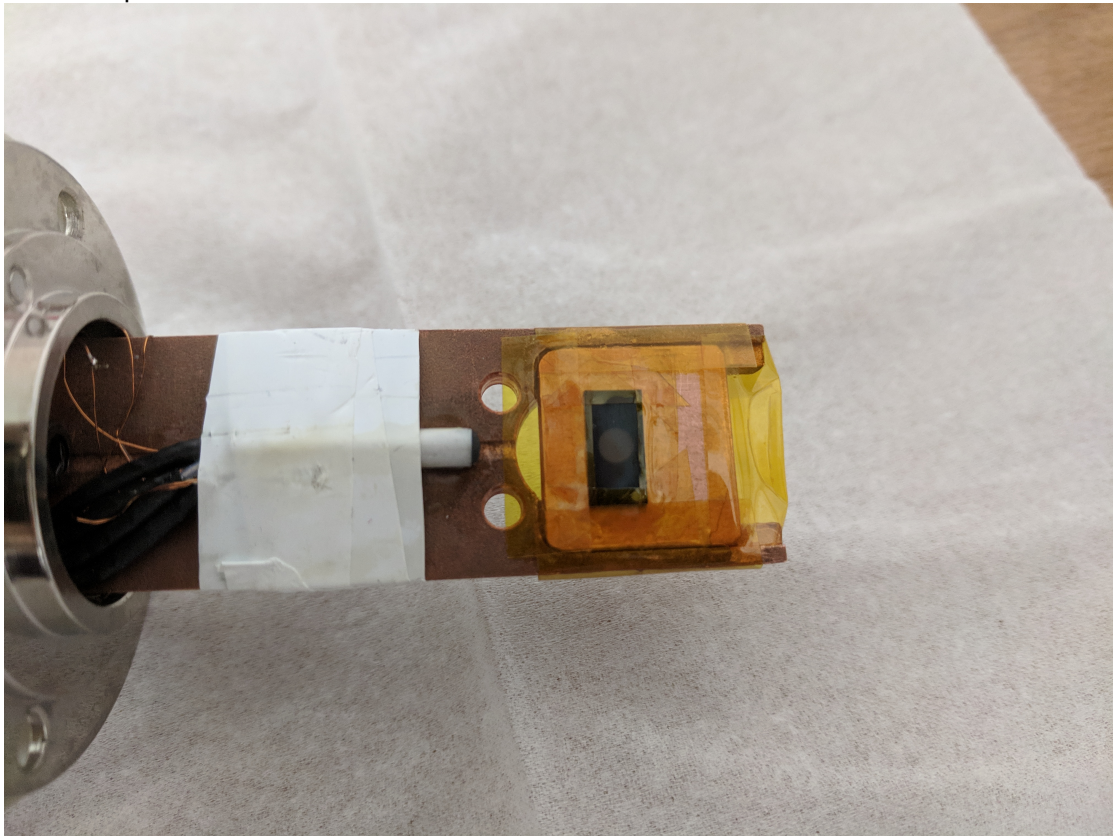
power BDA: 107 mW  
temperature at beginning of measurement: 81.0 K  
File: **33\_YBCO\_sample\_81p0K**  
temperature at end of measurement: 81.3 K

10:00 warm up cryostat for change to BSCCO sample

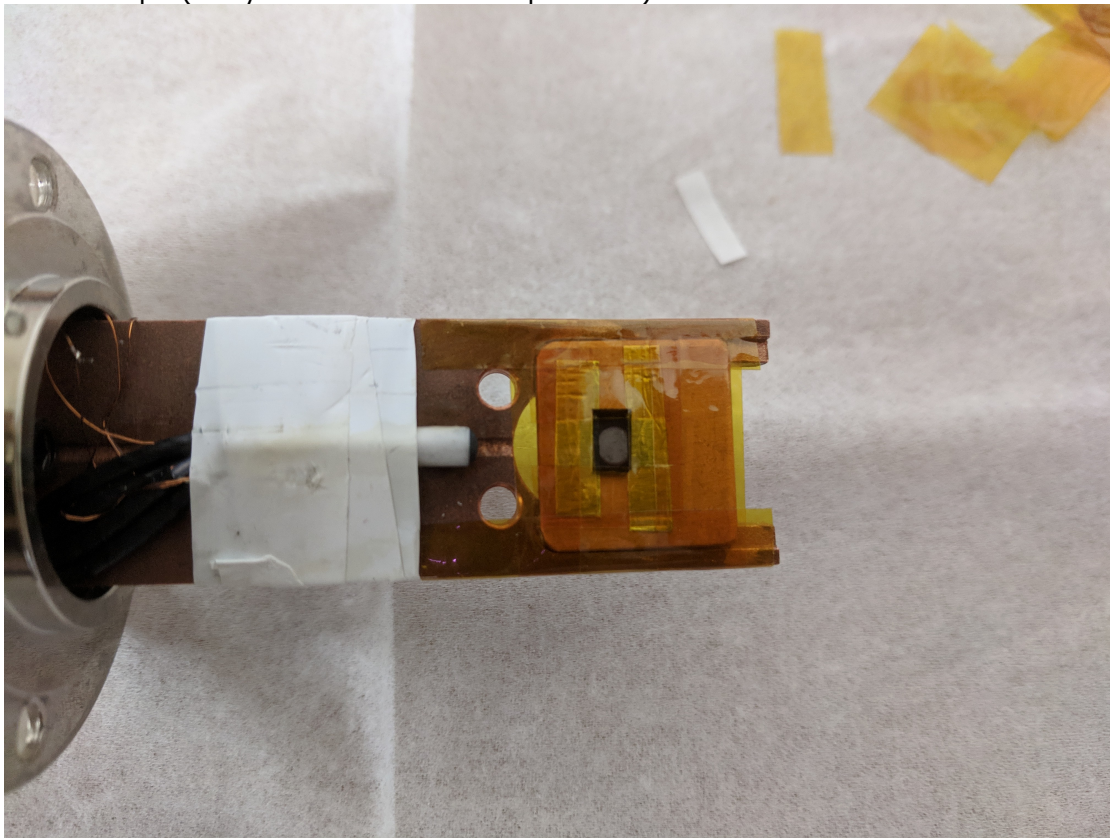
12:00

finished changing the sample to BSCCO. Removed ZBCO sample is placed inside BSCCO box.  
changed the pumping system to optimize pumping speed by reducing amount of tubes and connectors  
started pumping down ( $4.1 \times 10^{-5}$  mbar at 12:00)

YBCO sample:



BSCCO sample (newly mounted on same sample holder)



do fluence dependence on BSCCO @20K  
2x700GHz filter before sample  
1X2.1THz filter after

power BDA: 120 mW, 48 mW with 20% BP  
polarizer at 50° (full power)  
set temperature to 20 K  
File: **34\_BSCCO\_sample\_20K**  
temperature at end of measurement: 19.7 K  
2 loops  
100 steps

14:55  
power BDA: 120 mW, 48 mW with 20% BP  
polarizer at 50° (full power)  
File: **35\_BSCCO\_sample\_20K**  
reduced step number to 75  
3 loops more

found that after averaging 3 loops, the data quality is good

15:17  
power BDA: 122 mW, 48 mW with 20% BP  
polarizer at 55°  
File: **36\_BSCCO\_sample\_20K**  
75 steps  
5 loops

15:45  
power BDA: 119 mW, 47.5 mW with 20% BP  
polarizer at 60°  
File: **37\_BSCCO\_sample\_20K**  
75 steps  
3 loops

16:06  
power BDA: 118 mW, 47.5 mW with 20% BP lockin 96  
polarizer at 70°  
File: **38\_BSCCO\_sample\_20K**  
75 steps  
3 loops

16:25  
power BDA: 118.8 mW, 47.5 mW with 20% BP lockin 97  
polarizer at 90°  
File: **39\_BSCCO\_sample\_20K**  
75 steps  
3 loops

16:43  
power BDA: 119 mW, 47 mW with 20% BP lockin 97  
polarizer at 110°  
File: **40\_BSCCO\_sample\_20K**  
75 steps  
3 loops

17:01  
power BDA: 117 mW, 47 mW with 20% BP lockin 97  
polarizer at 85°  
File: **41\_BSCCO\_sample\_20K**  
75 steps  
3 loops

17:20  
power BDA: 118 mW, 47 mW with 20% BP lockin 97  
polarizer at 80°  
File: **42\_BSCCO\_sample\_20K**  
75 steps  
3 loops

17:40  
power BDA: 118 mW, 47 mW with 20% BP lockin 97  
polarizer at 75°  
File: **43\_BSCCO\_sample\_20K**  
75 steps  
3 loops

18:18  
power BDA: 118 mW, 47 mW with 20% BP lockin 96  
polarizer at 87°  
File: **44\_BSCCO\_sample\_20K**  
75 steps  
3 loops

18:52  
power BDA: 119 mW, 47.8 mW with 20% BP lockin 102  
polarizer at 87°  
File: **45\_BSCCO\_sample\_20K**  
**aborted at the 1st loop, forgot one filter**

File: **46\_BSCCO\_sample\_20K**  
75 steps  
3 loops  
power after: 117.5 mW, 46.8 mW

19:16

stay at 82°, and do temperature dependent measurements  
set temperature to 25 K

19:35

power BDA: 116 mW, 47 mW with 20% BP lockin 94

sample temperature 25.3 K

File: **47\_BSCCO\_sample\_25K**

75 steps

3 loops

power after: 116 mW, 47 mW

20:01

power BDA: 116 mW, 47 mW with 20% BP lockin 92

sample temperature 30.1 K

File: **48\_BSCCO\_sample\_30K**

75 steps

3 loops

power after: 117 mW, 46 mW

20:20

power BDA: 117 mW, 46 mW with 20% BP lockin 92

sample temperature 35.4 K

File: **49\_BSCCO\_sample\_35K**

75 steps

3 loops

power after: 116.4mW, 47mW

20:42

power BDA: 116 mW, 46 mW with 20% BP lockin 93

sample temperature 40.2 K

File: **50\_BSCCO\_sample\_40K**

75 steps

3 loops

power after: 115,5mW, 47 mW

21:00

power BDA: 115,5 mW, 47 mW with 20% BP lockin 92

sample temperature 45.3 K

File: **51\_BSCCO\_sample\_45K**

75 steps

3 loops

power after: 117 mW, temperature 46.1

**THE POLARIZER WAS AT 82**



