Example

May 11, 2020

Contents

1 Form

SIRIUS Beamline : Experiment 1234

Confined at home

- Type: Proposal
- Safety: Red
- Date: 13/03/2020-11/05/2020

- Main proposer: Hemmerle
- Local contact: Arnaud
- Users (on site): Person A; Person B
- Recording directory: /Users/arnaudhemmerle/Documents/Recherche/Analysis/JupyLabBook/recording/

- Machine:
  - Current: 450 mA
  - Mode: Hybrid

- Optics:
  - DCM: Si111
  - MGM: Not used

  - M1: M1-A Pt Track
  - M2: M2 Pt Track
  - M3: No M3
  - M4: M4 Pt Track

- Beam:
  - Fixed/Variable energy: Fixed
  - Energy (keV): 8
  - Wavelength (nm): 0.155
  - Harmonic: 19
  - Polarisation: LH
  - Phase (deg): 0
  - Horizontal focalisation False
  - Vertical focalisation True
  - Horizontal beamsize (mm): 0.1

- Monitors and XBPM:
  - mon1:
  - mon2: thick diamond
  - mon3:
  - mon4:
  - Detectors: Pilatus

- Remarks: This a nice experiment.

2 Beamline alignment

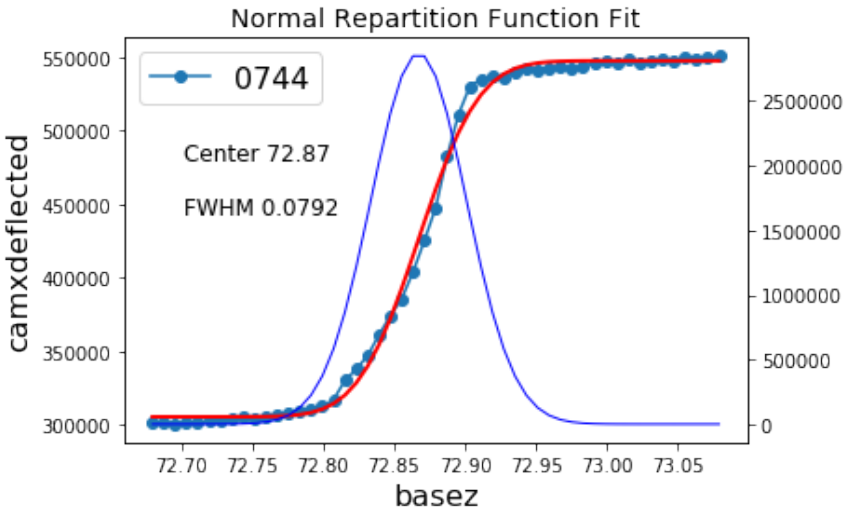
2.1 Scan 654 -> 680 : DCM Alignment 8keV + HU36 + M1 + M2

- Incidence :

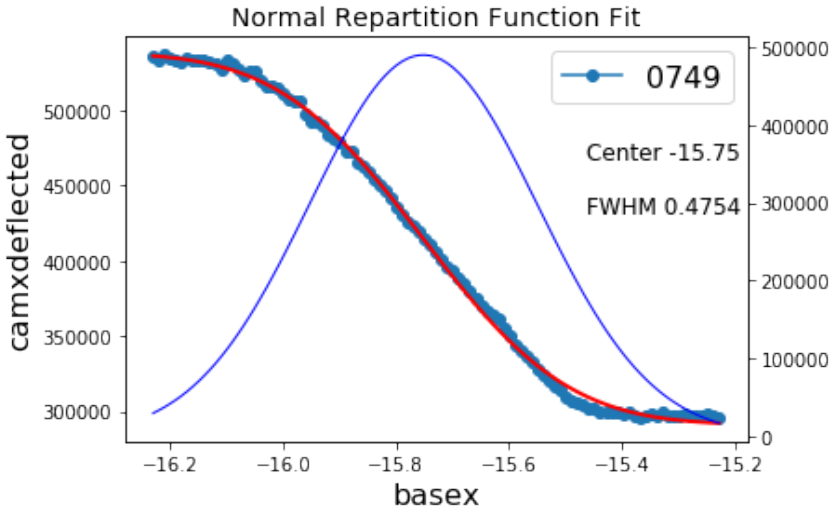
$$\frac{786 - 558}{2 \times 2069} \times 0.0355 = 1.9 mrad$$

2.2 Alignment diffracto

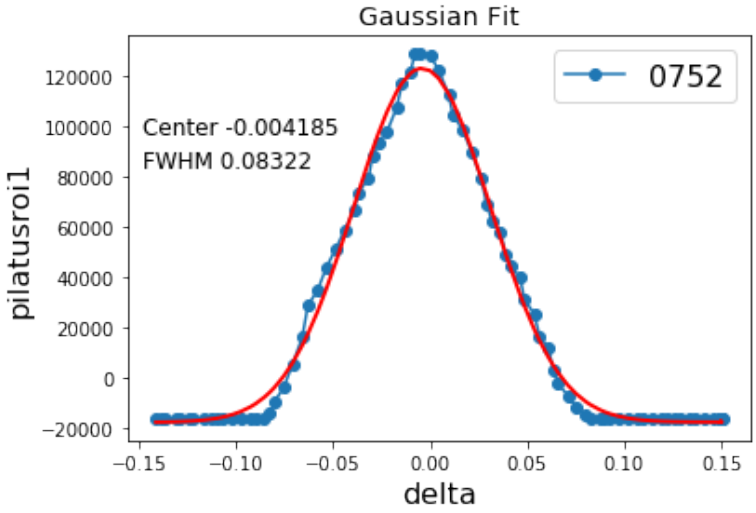
2.2.1 (Vertical) SIRIUS_2020_03_11_0744: dscan basez -.2 .2 50 .1



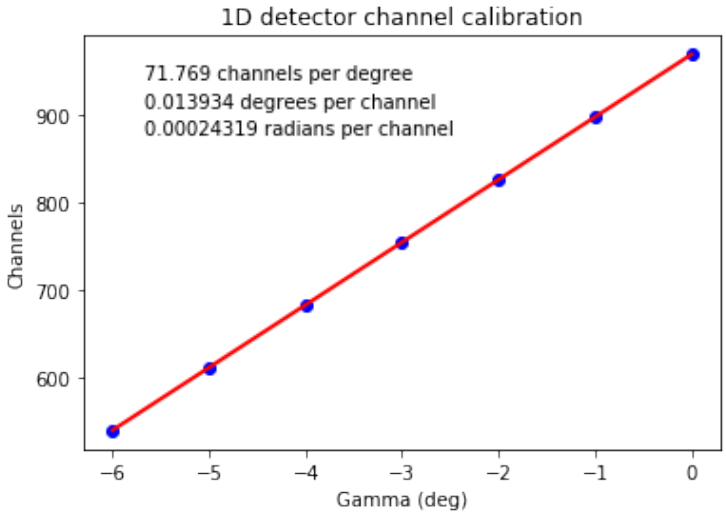
2.2.2 (Horizontal) SIRIUS_2020_03_11_0749: %sigmoid_dscan basex -.5 .5 100 .1



2.2.3 Scan 750 -> 752 : Alignment delta angle (Pilatus+Soller)



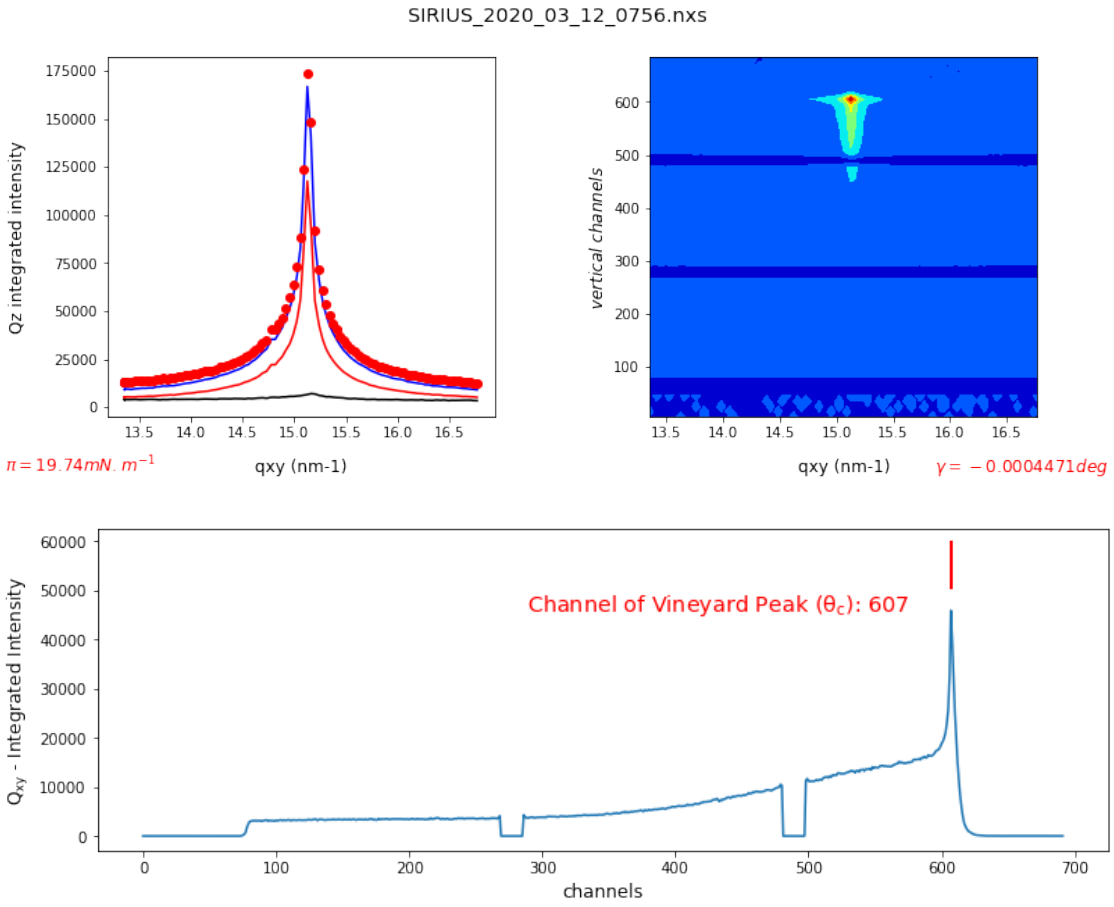
2.3 Calibration thetaz



3 Octadecanol (calibration)

3.0.1 SIRIUS_2020_03_12_0756: continuous_ascan delta -24 -19 100 5

```
 - Open Nexus Data File :
        /Users/arnaudhemmerle/Documents/Recherche/Analysis/JupyLabBook/recording
/SIRIUS_2020_03_12_0756.nxs
        . Number of data points:  101
        . Available Counters:
                0  ------->  delta
                1  ------->  zs
                2  ------->  gamma
                3  ------->  hu36energy
                4  ------->  xs
                5  ------->  energydcm
                6  ------->  current
                7  ------->  mon2
                8  ------->  surfacepressure
                9  ------->  areapermolecule
                10  ------->  qxy
                11  ------->  pilatus
                12  ------->  pilatusroi1
                13  ------->  integration_time
                14  ------->  sensorsRelTimestamps
                15  ------->  sensorsTimestamps
        . Pilatus data found, (column 11, alias pilatus)
        . qxy data found, (column 10, alias qxy)
        . Surface pressure data found, mean value 19.74 ± 0.006119 mN/m
        . Area per molecule data found, mean value 0.3557 ± 3.944e-05 nm2 per
molecule
        . Gamma motor data found, mean value -0.0004471 deg
```

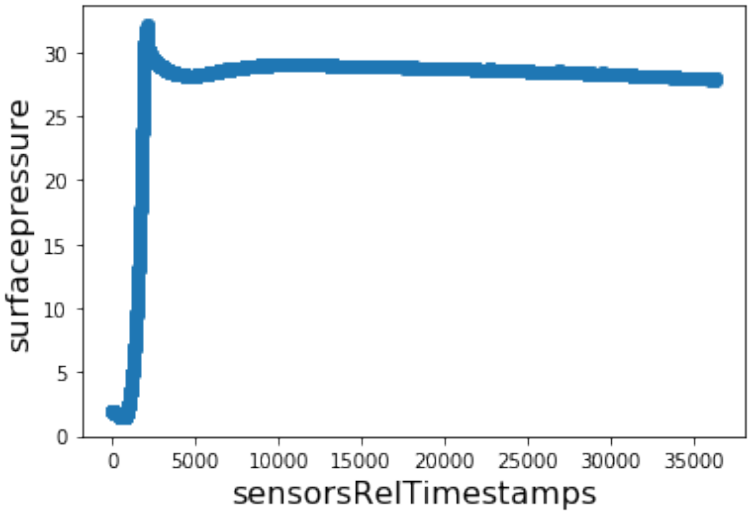



```
Data not saved. To save data, run a GIXD on the scan.
Channel0: 607
```

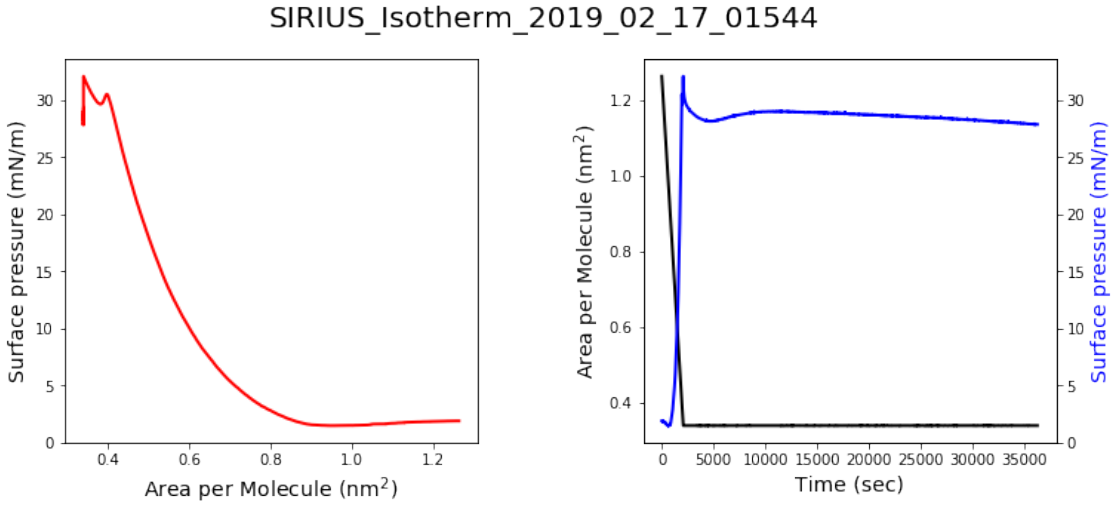
4 Scans

4.1 Sample A

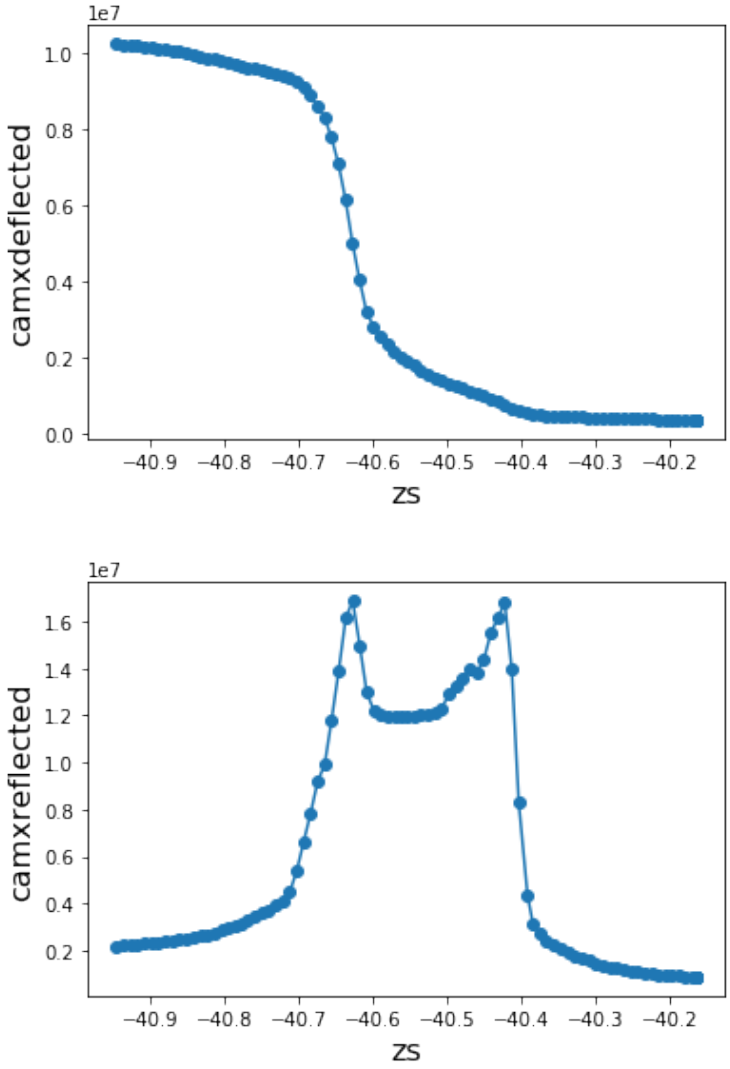
4.1.1 SIRIUS_Isotherm_2019_02_17_01544: isotherm 1.97 46 35000 1



- Open Nexus Data File :
/Users/arnaudhemmerle/Documents/Recherche/Analysis/JupyLabBook/recording/SIRIUS_Isotherm_2019_02_17_01544.nxs
. Number of data points: 35001
. Area per molecule found column 1
. Surface pressure per molecule found column 2
. Time per molecule found column 4
. Valuable data between points 0 and 35000



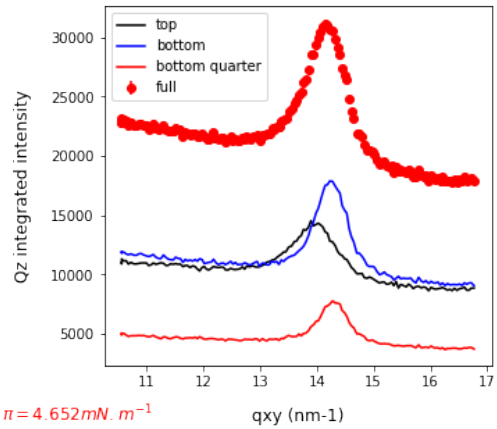
4.1.2 SIRIUS_2020_03_12_0760: run cont_regh.ipy



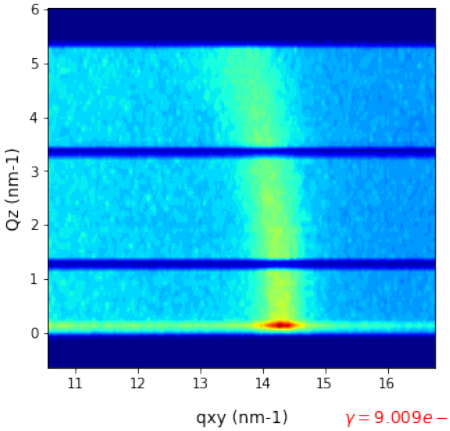
4.1.3 SIRIUS_2020_03_12_0759: continuous_ascan delta -24 -15 150 5

```
 - Open Nexus Data File :
        /Users/arnaudhemmerle/Documents/Recherche/Analysis/JupyLabBook/recording
/SIRIUS_2020_03_12_0759.nxs
        . Number of data points:  151
        . Pilatus data found, (column 11, alias pilatus)
        . qxy data found, (column 10, alias qxy)
        . Valuable data between points 0 and 150
        . Surface pressure data found, mean value 4.652 ± 0.002447 mN/m
        . Area per molecule data found, mean value 0.2927 ± 0.0002703 nm2 per
molecule
        . Gamma motor data found, mean value 9.009e-05 deg
        . For more details on the geometry, see:
                -Fig.2 in doi:10.1107/S0909049512022017
                -Slide 4 in http://gisaxs.com/files/Strzalka.pdf
        . Data saved in text format
```

SIRIUS_2020_03_12_0759.nxs

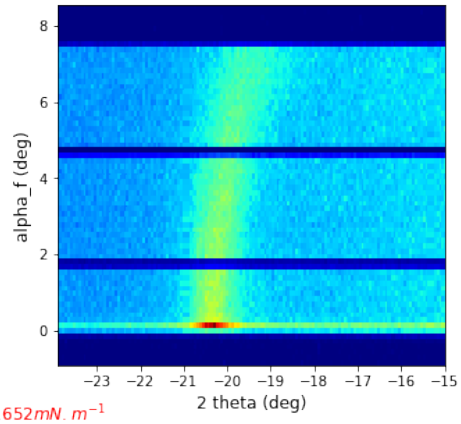


$\pi = 4.652 mN.\ m^{-1}$

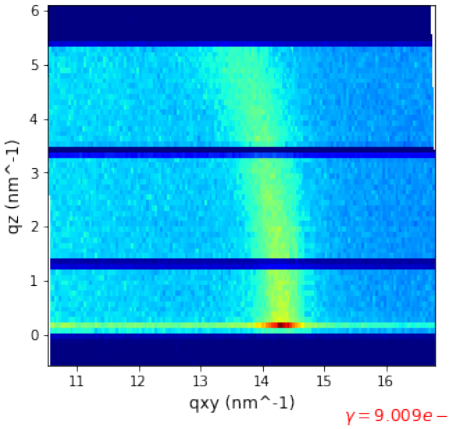


$\gamma = 9.009e-05 deg$

True GIXD



$\pi = 4.652 mN.\ m^{-1}$



$\gamma = 9.009e-05 deg$