

NAME

MX-calibrate – MX-calibrate

SYNOPSIS**MX-calibrate** *file1.edf file2.edf ...***DESCRIPTION**

Calibrate automatically a set of frames taken at various sampledetector distance.

OPTIONS

- version**
show program's version number and exit
- h, --help**
show this help message and exit
- v, --verbose**
switch to debug/verbose mode
- S FILE, --spacing=FILE**
file containing d-spacing of the reference sample (MANDATORY)
- w WAVELENGTH, --wavelength=WAVELENGTH**
wavelength of the X-Ray beam in Angstrom
- e ENERGY, --energy=ENERGY**
energy of the X-Ray beam in keV ($hc=12.398419292\text{keV}\cdot\text{\AA}$)
- P POLARIZATION_FACTOR, --polarization=POLARIZATION_FACTOR**
polarization factor, from **-1** (vertical) to **+1** (horizontal), default is 0, synchrotrons are around 0.95
- b BACKGROUND, --background=BACKGROUND**
Automatic background subtraction if no value are provided
- d DARK, --dark=DARK**
list of dark images to average and subtract
- f FLAT, --flat=FLAT**
list of flat images to average and divide
- s SPLINE, --spline=SPLINE**
spline file describing the detector distortion
- p PIXEL, --pixel=PIXEL**
size of the pixel in micron
- D DETECTOR_NAME, --detector=DETECTOR_NAME**
Detector name (instead of pixel size+spline)
- m MASK, --mask=MASK**
file containing the mask (for image reconstruction)
- filter=FILTER**
select the filter, either mean(default), max or median
- saturation=SATURATION**
consider all $\text{pixel} > \text{max} * (1 - \text{saturation})$ as saturated and reconstruct them
- r MAX_RINGS, --ring=MAX_RINGS**
maximum number of rings to extract
- weighted**
weight fit by intensity
- l DISTANCE, --distance=DISTANCE**
sample-detector distance in millimeter

--no-tilt
refine the detector tilt

--poni1=*PONI1*
poni1 coordinate in meter

--poni2=*PONI2*
poni2 coordinate in meter

--rot1=*ROT1*
rot1 in radians

--rot2=*ROT2*
rot2 in radians

--rot3=*ROT3*
rot3 in radians

--fix-dist
fix the distance parameter

--free-dist
free the distance parameter

--fix-poni1
fix the poni1 parameter

--free-poni1
free the poni1 parameter

--fix-poni2
fix the poni2 parameter

--free-poni2
free the poni2 parameter

--fix-rot1
fix the rot1 parameter

--free-rot1
free the rot1 parameter

--fix-rot2
fix the rot2 parameter

--free-rot2
free the rot2 parameter

--fix-rot3
fix the rot3 parameter

--free-rot3
free the rot3 parameter

--fix-wavelength
fix the wavelength parameter

--free-wavelength
free the wavelength parameter

--no-gui
force the program to run without a Graphical interface

--gui force the program to run with a Graphical interface

--no-interactive
force the program to run and exit without prompting for refinements

--interactive

force the program to prompt for refinements

This tool has been developed for ESRF MX-beamlines where an acceptable calibration is usually present in the header of the image. PyFAI reads it and does a "recalib" on each of them before exporting a linear regression of all parameters versus this distance.