

**NAME**

diff\_tomo – Azimuthal integration for diffraction tomograph

**DESCRIPTION**

usage: diff\_tomo [options] **-p** ponifile imagefiles\*

Azimuthal integration for diffraction tomography. Diffraction tomography is an experiment where 2D diffraction patterns are recorded while performing a 2D scan, one (the slowest) in rotation around the sample center and the other (the fastest) along a translation through the sample. Diff\_tomo is a script (based on pyFAI and h5py) which allows the reduction of this 4D dataset into a 3D dataset containing the rotations angle (hundreds), the translation step (hundreds) and the many diffraction angles (thousands). The resulting dataset can be opened using the PyMca ROItool where the 1d dataset has to be selected as last dimension. The output file aims at being NeXus compliant. This tool can be used for mapping experiments if one considers the slow scan direction as the rotation. but the *\*diff\_map\** tool provides in addition a graphical user interface.

**positional arguments:**

**FILE** List of files to calibrate

**optional arguments:**

**-h, --help**

show this help message and exit

**-V, --version**

show program's version number and exit

**-o FILE, --output FILE**

HDF5 File where processed sinogram was saved, by default diff\_tomo.h5

**-v, --verbose**

switch to verbose/debug mode, default: quiet

**-P FILE, --prefix FILE**

Prefix or common base for all files

**-e EXTENSION, --extension EXTENSION**

Process all files with this extension

**-t NTRANS, --nTrans NTRANS**

number of points in translation. Mandatory

**-r NROT, --nRot NROT**

number of points in rotation. Mandatory

**-c NDIFF, --nDiff NDIFF**

number of points in diffraction powder pattern, Mandatory

**-d FILE, --dark FILE**

list of dark images to average and subtract

**-f FILE, --flat FILE**

list of flat images to average and divide

**-m FILE, --mask FILE**

file containing the mask, no mask by default

**-p FILE, --poni FILE**

file containing the diffraction parameter (poni-file), Mandatory

**-O OFFSET, --offset OFFSET**

do not process the first files

**-g, --gpu**

process using OpenCL on GPU

**-S, --stats**

show statistics at the end

If the number of files is too large, use double quotes "\*.edf"