

**NAME**

pyFAI-average – Image preprocessing tool

**DESCRIPTION**

usage: pyFAI-average [options] [options] **-o** output.edf file1.edf file2.edf ...

This tool can be used to average out a set of dark current images using mean or median filter (along the image stack). One can also reject outliers by specifying a cutoff (remove cosmic rays / zingers from dark)

**positional arguments:**

**FILE** Files to be processed

**optional arguments:**

**-h, --help**

show this help message and exit

**-V, --version**

show program's version number and exit

**-o OUTPUT, --output OUTPUT**

Output/ destination of average image

**-m METHOD, --method METHOD**

Method used for averaging, can be 'mean' (default) or 'min', 'max', 'median', 'sum', 'quantiles', 'cutoff', 'std'. Multiple filters can be defined with ',' separator.

**-c CUTOFF, --cutoff CUTOFF**

Take the mean of the average  $\pm$  cutoff \* std\_dev.

**-F FORMAT, --format FORMAT**

Output file/image format (by default EDF)

**-d DARK, --dark DARK**

Dark noise to be subtracted

**-f FLAT, --flat FLAT**

Flat field correction

**-v, --verbose**

switch to verbose/debug mode

**-q QUANTILES, --quantiles QUANTILES**

average out between two quantiles **-q** 0.20–0.90

**--monitor-name MONITOR\_KEY**

Name of the monitor in the header of each input files. If defined the contribution of each input file is divided by the monitor. If the header does not contain or contains a wrong value, the contribution of the input file is ignored. On EDF files, values from 'counter\_pos' can be accessed by using the expected mnemonic. For example 'counter/bmon'.

**--quiet**

Only error messages are printed out

It can also be used to merge many images from the same sample when using a small beam and reduce the spottiness of Debye–Sherrer rings. In this case the "max-filter" is usually recommended.