

## aiCoarseTiltSeriesAlignator

aiCoarseTiltSeriesAlignator determines the shifts from one tilt series image to another based on crossed correlation and tilt angle dependent cosine stretching.

The more precise initial image rotation is determined before hand, the better are the results of aiCoarseTiltSeriesAlignator. Initial rotation angles should be known +/- 1 degree.

aiCoarseTiltSeriesAlignator can be used without a configuration file and all parameters can be provided by command line arguments. For convenience, parameters can also be given using a configuration file with the **-u** command line argument. Note: If a parameter is passed by file and by command line, the command line overrides the file.

Options are:

### CudaDeviceID

The deviceID of the GPU to use.

Argument for command line: **-d** or **--CudaDeviceID**

Type: **int**

Option is mandatory: **false**

Default value if not set: **0**

### Input

The file to process.

Argument for command line: **-i** or **--Input**

Type: **string**

Option is mandatory: **true**

### LP

Low pass filter value.

Argument for command line: **-lp** or **--LP**

Type: **float**

Option is mandatory: **true**

### LPS

Low pass filter sigma value.

Argument for command line: **-lps** or **--LPS**

Type: **float**

Option is mandatory: **true**

### HP

High pass filter value.

Argument for command line: **-hp** or **--HP**

Type: **float**

Option is mandatory: **false**

Default value if not set: **0**

### HPS

High pass filter sigma value.

Argument for command line: **-hps** or **--HPS**

Type: **float**  
Option is mandatory: **false**  
Default value if not set: **0**

## **MaxTiltDifference**

The maximum tilt angle difference allowed in between projections for being incorporated in shift determination.

Argument for command line: **-maxTilt** or **--MaxTiltDifference**

Type: **float**

Option is mandatory: **true**

## **MaxShift**

Maximum allowed shift.

Argument for command line: **-m** or **--MaxShift**

Type: **int**

Option is mandatory: **false**

Default value if not set: **0**

## **ImageRotation**

Overwrites the image rotation given in tilt series metadata.

Argument for command line: **-r** or **--ImageRotation**

Type: **float**

Option is mandatory: **false**

Default value if not set: **-360**

## **DisableFailedFrames**

Sets the 'IgnoreFrame' flag if a frame cannot be tracked (enables all frames before execution).

Argument for command line: **-fail** or **--DisableFailedFrames**

Type: **bool**

Option is mandatory: **false**

Default value if not set: **true**