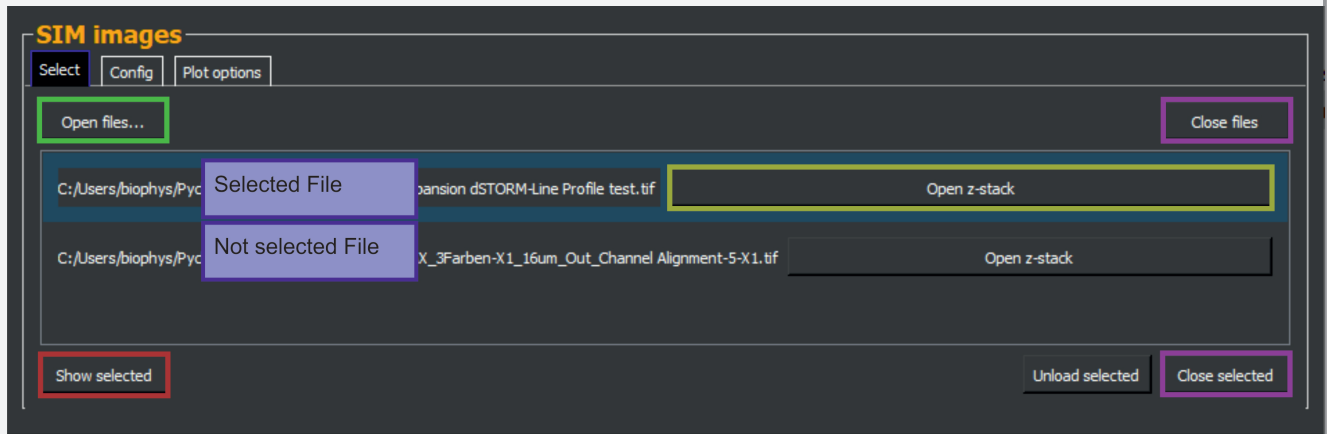


How to load and display data



1 Loading data (Green)

To load data you first have to add the path to your image to the files list. This can either happen by drag and drop or by pressing the „Open files...“ button.

2 Displaying data (Red)

You can select a file by simply pressing its name. Pressing „Show selected“ loads the currently selected file into memory. Data can now be displayed by clicking the checkbox of the corresponding color channel.

3 X-z profiles (Yellow)

If you want a x-z profile image of your filament structure you can add the corresponding z-stack to your file by pressing Open-z or simply dragging and dropping it on the button.

4 Close files (Magenta)

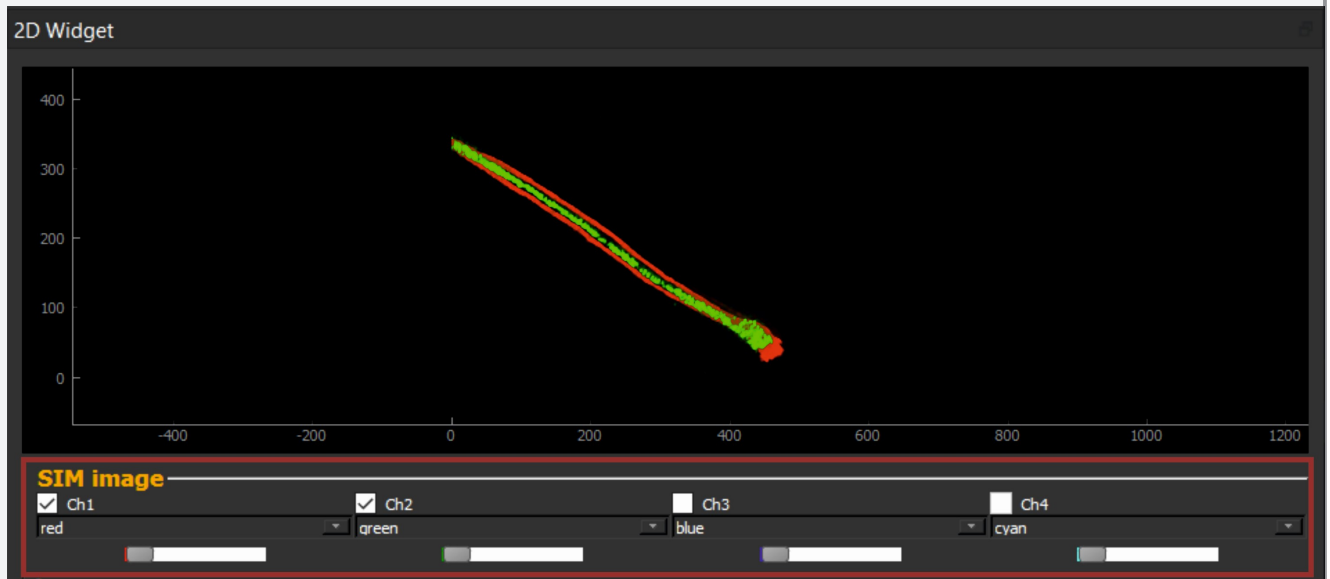
To close files you can either press „Close files“ to clear your image list or „Close selected“ to delete the currently selected file from the image list.

Note 1

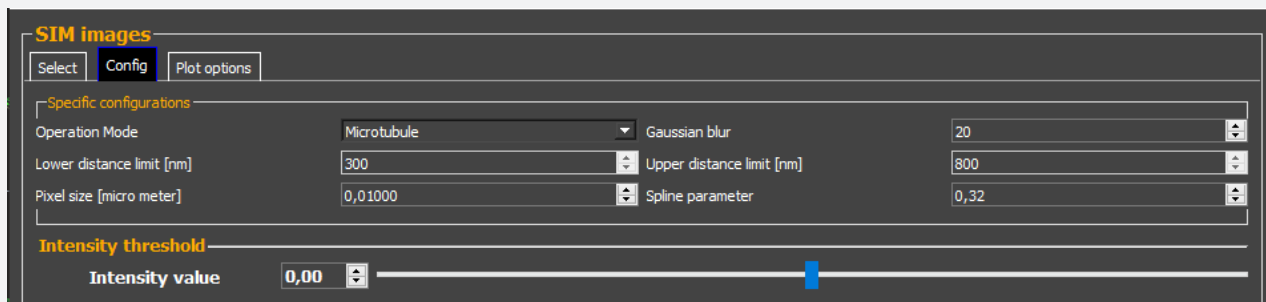
Supported file types are .czi, .tiff, .tif or .lsm

Note 2

x-z profiles are currently only supported in micro-tubule mode



How to configure processing parameters



1 Operation mode

Line profiler currently features the operation modes Microtubule; SNC; SNC_one_channel. Microtubule mode evaluates all filament like structures found in the image. SNC_one_channel mode evaluates all structures with a Peak-to-Peak distance $\in [Lowerlimit, Upperlimit]$. SNC mode does basically the same, apart from constructing the c-splines over the second channel.

2 Blur

Averaging your data compensating noise. The better your data the lower the blur.

3 Upper and lower limit

Upper and lower distance limit for the peaks in a line profile to be accepted for evaluation

4 Pixelsize

The pixelsize of your image in micrometer

5 Spline parameter

Smoothing factor for spline evaluation.

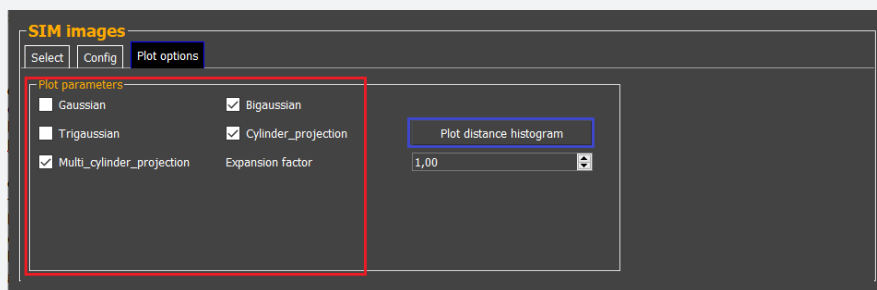
6 Intensity threshold

Intensity threshold for image evaluation. Your structures should be clearly visible before you start processing.

Note 3

All configuration parameters affect only the position and direction of the line profiles. They don't manipulate the image data in any way

How to configure output

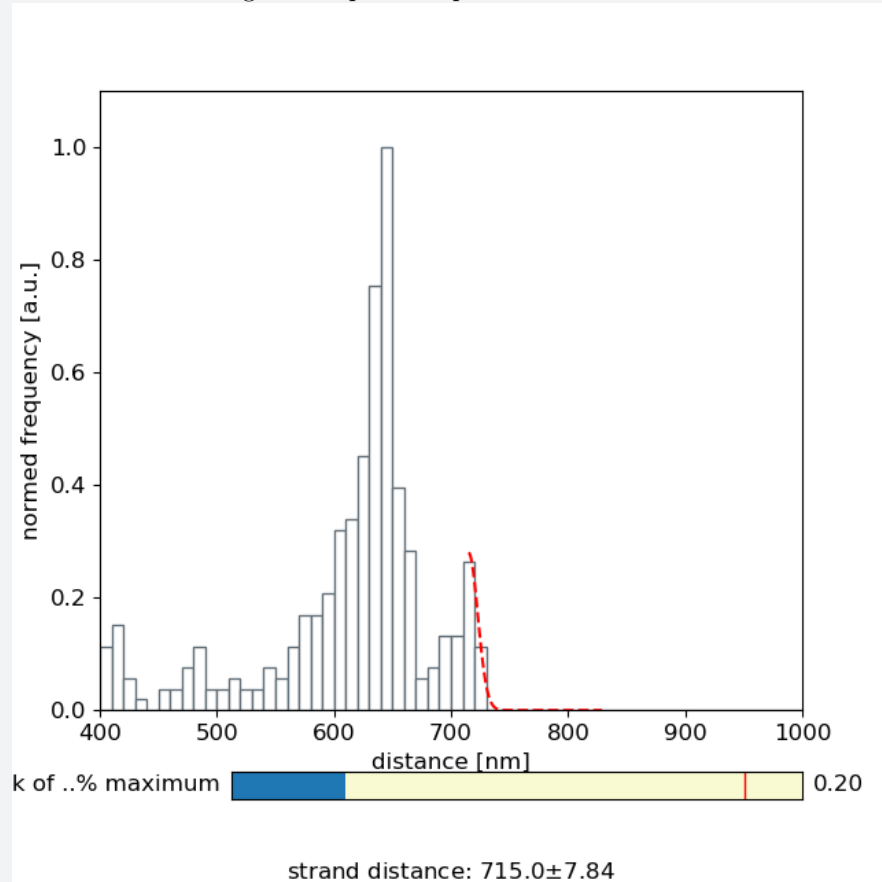


1. Fit parameters

Check the checkbox of the functions you want fitted to your data. for a detailed description take a look at the documentation^a.

2. Histogram plot

Since the mean strand distance for helical data (SC) is biased we recommend to determine the maximum distance via the histogram fit. The „plot distance Histogram“ will collect the distance files of all evaluated images in the image list and create a histogram. The slider on the lower half of the plot determines which percentage of the maximum peak i.e. 1.0 is still valid to be fitted. Line profiler then chooses the rightmost possible peak and fits a half-norm to the data.



^a<https://line-profiler.readthedocs.io/en/latest/controllers.fitter.html>