Help File

Help file for the lateral deflection processing tool.
With this tool it is possible to get the peak values occurring in the lines of a lateral force scan map.

Map File

The force map must be in the .xyz format. This file format can be exported from the open source software 'Gwyddion'.

Any corrections like baseline correction or subtraction of the polynomial background, should be done first in the data processing software of your AFM manufacturer. For .jpk files this is the JPK Data Processing software.

Loading File

After the export of the corrected map from the processing software and the conversion of the .jpk file to a .xyz file with Gwyddion you can load the map in the Lateral Deflection Processing Tool by clicking the 'Load file' button in the top left corner.

You will be asked about the pixels in the fast axis (x-axis) of the map. This information is required for a proper laod process, since all header informations are lost while the conversion in a .xyz file.

You can get this pixel information of you map in the JPK Data Processing software.

Paremeters

In the GUI you can adjust two parameters:

1. Colorbar multiplier
   This parameter controls the multiplier of the afm gold colorbar of the displayed map. So you can adjust the color appearance of the shown map.

2. Peak prominence factor:
   This parameter controls the prominence a peak has to have compared to the overall noise of the displayed line to be detected as a peak.

Peak Table

Underneath the two adjustable parameters is the peak table which provides the informations about the detected peaks in the current line of the map displayed in the line graph at the bottom of the GUI.

============================== Data Processing ==============================

For each line you can choose in the peak table with a check box witch detected peaks represent the events you are looking for.
The you can click on 'Next Line' go one step further.
Or you can click 'Previous Line' to go one line back an readjust your choice which peaks you want to keep.

============================== Saving Results ==============================

When you processed the last line of the map you will be asked if you want to save the results.
When you choose 'Yes' you have to divine the save location and file name.
In this location the results will be saved in two files (.tsv and .xlsx) for further analysis or plotting.

If you want you can anytime save the already processed lines by clicking on the 'Save data' menu button at the top of the GUI.