# FunWorm-SF User Manual

## Installation：

1. Hardware recommendation: multi-core processor (AMD, Intel), memory >8G.
2. Operation systems: Linux and Windows 10,and MacOS version will be released soon.
3. Software requirement: MATLAB® R2019a_update6/R2019b_update1/R2020a.
4. Copy FunWorm-SF.zip to desired directory and unpack.

## How to use:

1. Double click MATLAB® icon to start the main program.
2. Point path to unpacked FunWorm-SF directory.
3. Right-click **FunWorm_export.p** in the left window and then select **run** or input '**FunWorm_export**' in command window and then press Enter key.
4. Depending on the system resources, some steps may take longer time. Please be patient and do not try to click buttons multiple times.
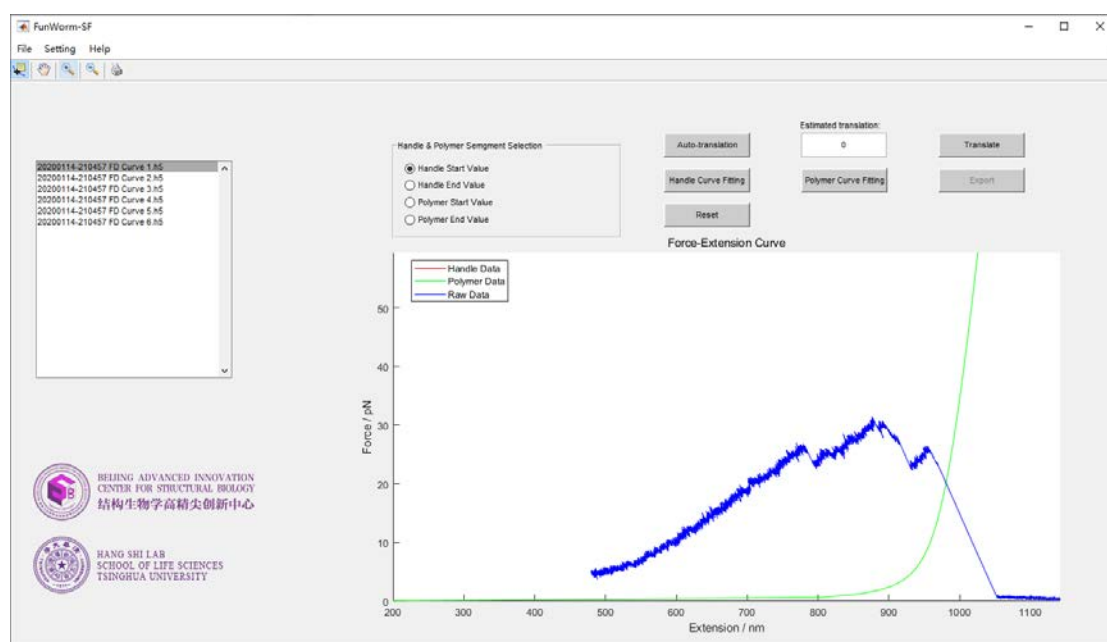


## Introduction:

### File

  i. *Load .mat File*

  In the .mat File, data must be named as 'E' (extension) and 'F' (Force) to be loaded.(this function will be upgrade soon)

  ii. *Import Folder*

Which can move source data folder to work directory.

*iii.* *Select Folder*

Select data directory that contains .h5 format files.

*iv.* *Close*

Close software.

**Setting**

*i.* *Parameter settings*

*Models*

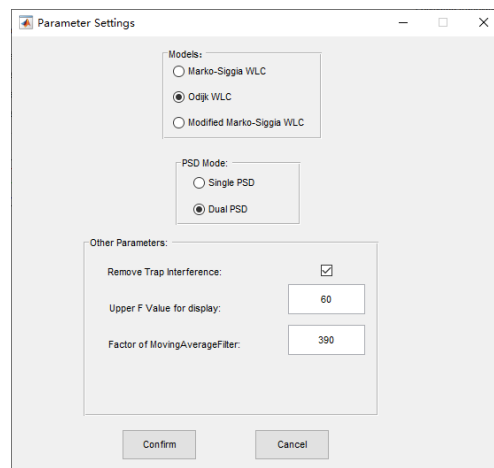Select one of the WLC models for fitting.

*PSD Mode*

Select device where source data is generated.

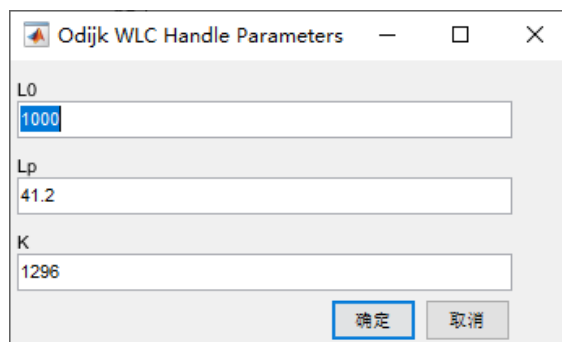*Other Parameters*

Remove Trap Interference or not.

Input the upper display value for F (Force) in the main window for FE curve.

Input the factor of moving average filter.d
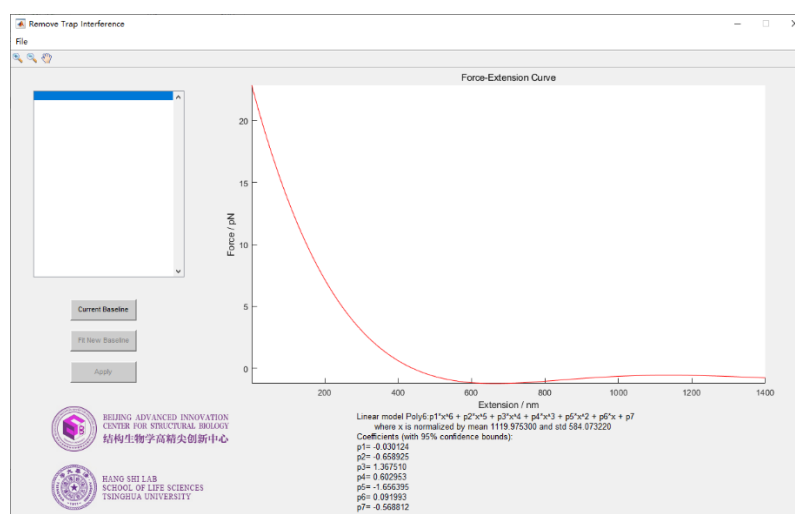


*ii.* *WLC Handle Parameters*

Input initial values for contour length (L0), persistence length (Lp) and stretch modulus (K) for handles correspond to each model.
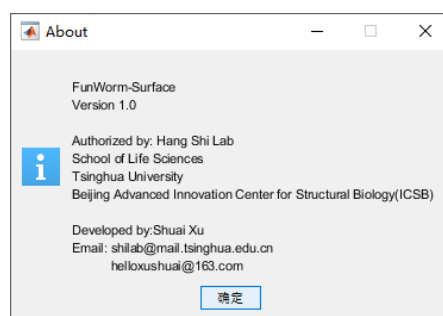


*iii.* *WLC Polymer Parameters*

Input initial values for contour length (L0), persistence length (Lp) and stretch modulus (K) for polymer correspond to each model.



### iv. *Remove Trap Interference*



## Help

### i. *Contact Info*



### ii. *Fitting procedure see demo video*

Demo video will be upload soon.

### iii. *Export*

Export raw data, displacement, initial values, fitting results, fitting statistics, theoretical WLC curve and fitted curve to generate report.

Windows: export as Excel files.

Linux: export as .mat files.

MacOS: it will be supported in next version.