

LocFileVisualizer 1.1

Installation Guide & How to Use

1. Installation (Fig. 1):

A) Download and install Fiji (<http://fiji.sc/Fiji>), update to version 1.52g or higher.

B) Install LocFileVisualizer by either copying 'LocFileVisualizer_v1.1.ijm' into the plugins folder of ImageJ/Fiji (suggestion: 'Fiji.app\plugins\Macros') or by selecting *Plugins>Install...* (**Fig. 1 (1)**). Restart ImageJ/Fiji. Once ImageJ is launched, the macro now appears in *Plugins>Macros>LocFileVisualizer_v1.1* (2). A keyboard shortcut to LocFileVisualizer can be assigned using *Plugins>Shortcuts>Add Shortcut...*

C) Optionally: Copy the settings file named 'LocFileVisualizer_v1.1_settings.txt' to the macro folder of Fiji ('Fiji.app\macros'). The file contains start values. Changes made in all GUI are automatically saved to this file and appear as start values when the macro is restarted.

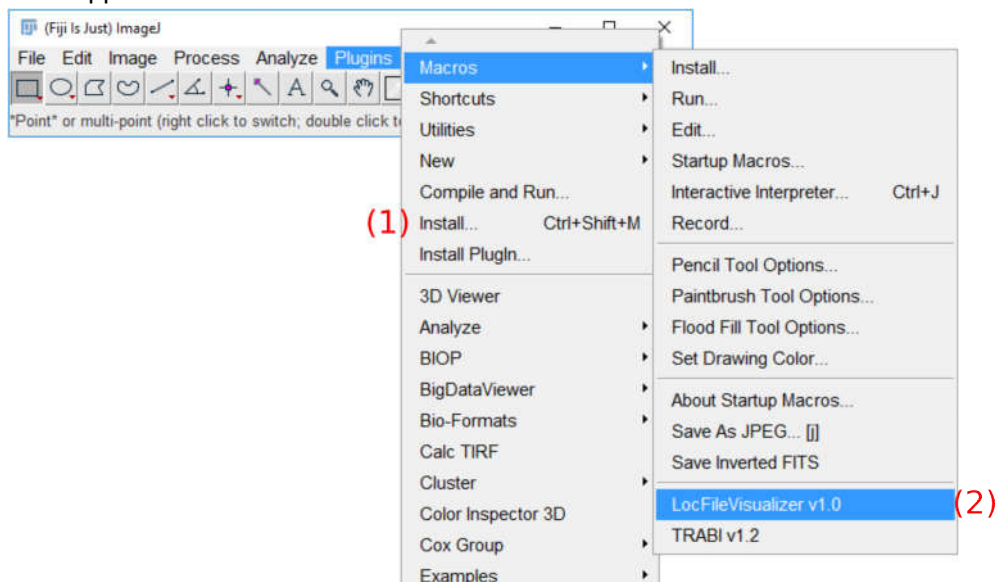


Figure 1. Installation of LocFileVisualizer. (1) Install macro 'LocFileVisualizer_v1.1.ijm', (2) Run macro after installation

2. How to use (Figs. 2 & 3)

Operation modes.

The LocFileVisualizer macro supports the import of localization files, reconstruction of images and visualization of localizations in TIF stacks. Five operation modes can be selected:

- i) **Import_loc_file:** If selected, a localization file is loaded as ImageJ Results table. No further action. Results table can then be further processed by generating an image (operation ii), showing localizations in a TIF stack (operation iv), or arbitrary processes in Fiji. Press 'OK' button to execute.
- ii) **Generate_image:** Image generated from Results table (loaded by operation i). Helpful when multiple images should be generated without reloading the localization file all the time. Options for image generation are made in the main GUI (**Fig. 2**). Press 'OK' button to execute.
- iii) **Import&Generate:** Execute steps i) & ii).
- iv) **Show_localizations:** Displays localization within TIF stack, requires localization file to be already loaded by operation i) . Image stack must have been loaded before. Just specify operation and loc-file and press 'OK' button (**Fig. 2**). Another GUI will appear for further specifications (**Fig. 3**).
- v) **Import&Show:** Execute steps i) & iv). Image stack must have been loaded before.

Localization files.

'ThunderSTORM' and 'rapidSTORM' localization files are supported as well as a 'Basic' file format (X, Y, Z, Frame, and Intensity with SPACE as separator). By selecting 'User-defined' any localization file can be loaded (**Fig. 3**).

The help button gives additional explanation on the macro (**Fig. 2, (4)**).

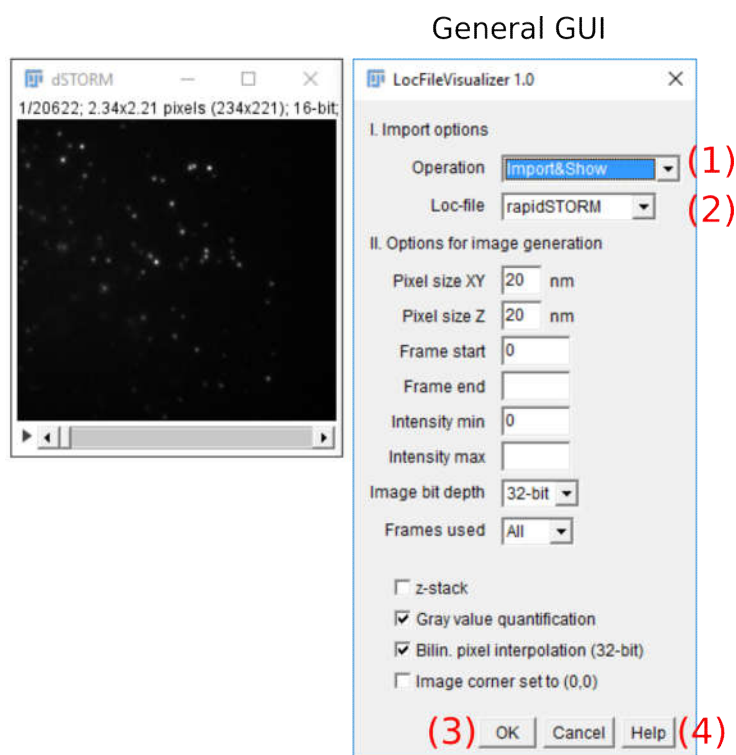
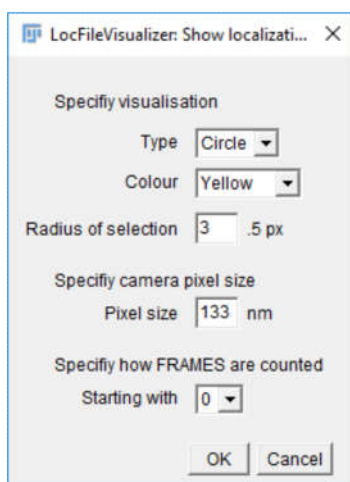


Figure 2. LocFileVisualizer: Main GUI. (1) Select operation, (2) select localization file. If 'Import_loc_file', 'Show_localizations' or 'Import&Show' is selected, just press the 'OK' button (3). A TIF stack has to be loaded for these operations as shown on the left side. Options for image generation only apply to 'Generate_image' and 'Import&Generate' as operation (no TIF stack required). The help button gives additional explanation on each setting (4).

Show Localizations



User-defined loc-file

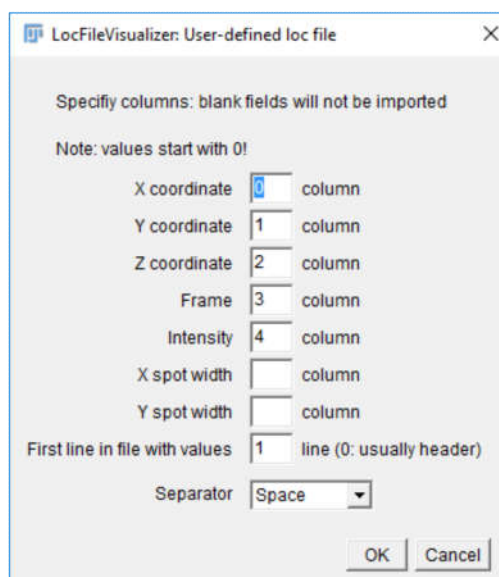


Figure 3. LocFileVisualizer: Further GUIs. *Left:* GUI for ‘Show localizations’ and ‘Import&Show’. Some localization files start with 0, some with 1 as first frame. This has to be specified to show the localizations in the right frame. *Right:* GUI for user-defined localization file. Only assigned columns are imported by the macro, whereas blank fields are not imported. *First line with values* and *separator* must be specified.

Reference:

Sebastian van de Linde, Single-molecule localization microscopy analysis with ImageJ, *J. Phys. D: Appl. Phys.* **52** 203002 (2019) [DOI:10.1088/1361-6463/ab092f](https://doi.org/10.1088/1361-6463/ab092f); Updates: <http://bcp.phys.strath.ac.uk/photophysics/super-resolution/software/>