

March/03/2020 Written by Hironori Sugiyama

1. Explanation of contents:

- a. src (folder): a folder containing a bright field image of trapping region.
- b. 190611\_sugiyama.JNL: a journal script for MetaMorph.
- c. MANSIONs\_ver.2.0.py: main code of MANSIONs. Type "python MANSIONs\_ver.2.0.py" at the appropriate directory (described later).
- d. configurations.py: a python script defining common variables or functions in MANSIONs.
- e. ContecCDIO.py: a list of variables to regulate contec (digital I/O board).
- f. methods.py: a list of functions to be used in MANSIONs for individual measurement.

2. How to use:

- a. Create folders named "auto-observation" and "do-not-delete" at your desktop.
- b. Put 1-a, 1-c, 1-d, 1-e, 1-f into "auto-observation".
- c. Put 1-b into an appropriate directory for MetaMorph (it depends on your setup of MetaMorph).
- d. Open MetaMorph, and run the journal.
- e. Run "python MANSIONs\_ver.2.0.py" from command line.

3. Notes:

- a. You can freely download contents above listed and modify them without special permissions.
- b. To proceed MANSIONs correctly, you should build the set of apparatus, such as electric valves, pumps, contec, electric stage, and ludl shutter system. If you get some questions or need of help for the first setup, please contact the corresponding authors or me.
- c. We did not implement GUI for MANSIONs. When you do MANSIONs for your own experiments, you can define new methods in "methods.py" and rewrite "MANSIONs\_ver.2.0.py". We believe the codes are simple enough for those who intended to modify MANSIONs by themselves, but we are very open to questions and supports.
- b. Since we have used MetaMorph to regulate the microscope system, the program was adjusted for MetaMorph. However, it would be more easy to handle if you can use micromanager (not implemented).