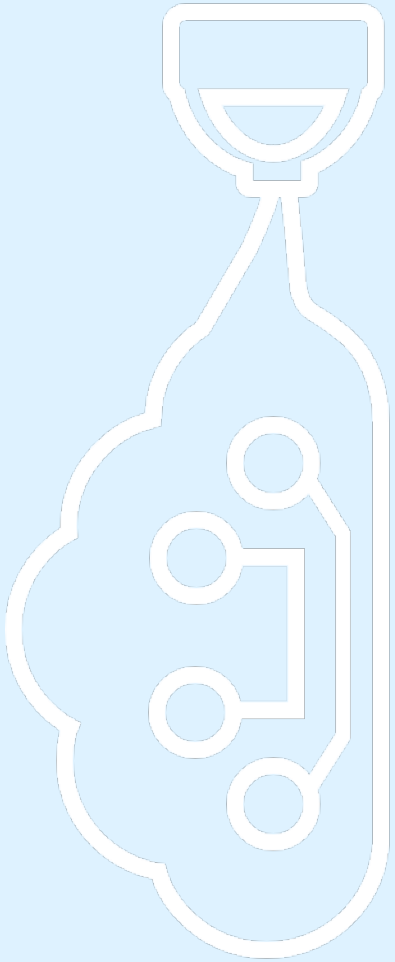
# Step by Step Manual

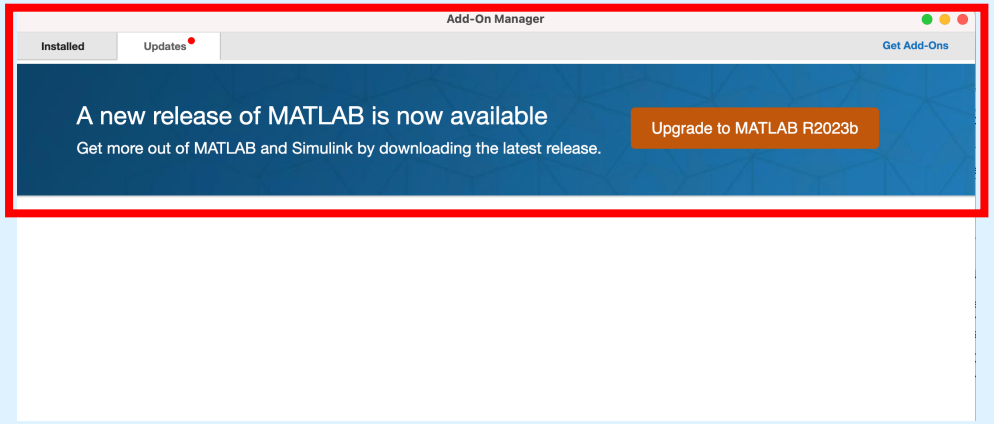


MEA Analyzer

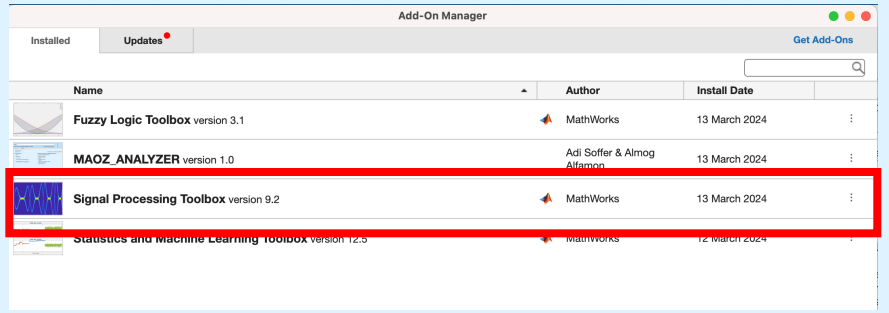
MAOZ

# Pre-Installation

1) **make sure you are using the most updated version of MATLAB -** On the MATLAB app go to Home>Add-ons>Manage add-ons> Updates > check if any update is needed



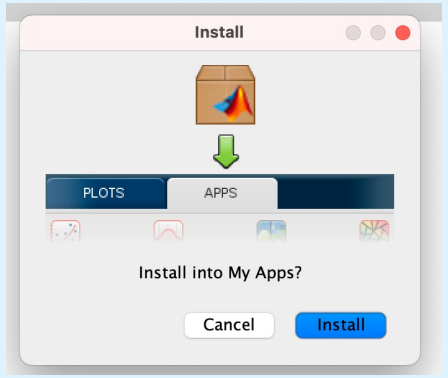

2) **Make sure you have the ”Signal Processing Toolbox” add-on**. On the MATLAB app go to Home>Add-ons>Manage add-ons> Installed and check if the add-on appear there.



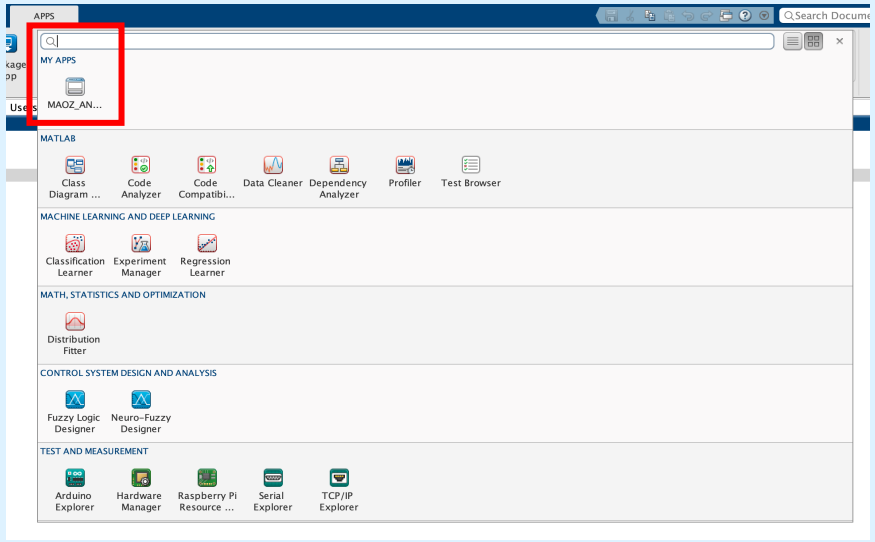

If you don’t have it, install it using Home>Add-ons> get add-ons > search “Signal Processing Toolbox” > install

# Installation

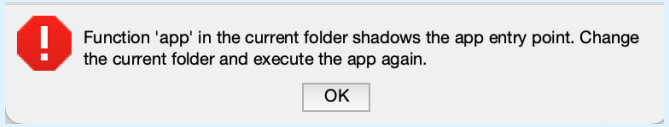
1) Download the MAOZ Analyzer app and save it on your computer.
2) Open MATLAB and go to Home>open>choose the folder in which you saved the app>doble click on the app
3) If A window will pop up and MATLAB will ask you if you want to install the app, press install.




4) The app will be added to the ”APPS” section and now you can open it:




**Note:** if you trying to to open the app and this warning message appears:




it is because the “current folder” tab is open on the same folder that the app is saved in, so simply change it to a different folder.

# Installation

1) The app package include the following:
    a. The app
    b. The app logo
    c. Single well analysis code
    d. Six well analysis code
2) Where can you find these files : They will be saved in a folder that will be open automatically when you install the app. The folder will be located based on MATLAB add-ons default preferences:

*"MATLAB installs all other add-ons in a default installation folder specific to the platform.*
*•Windows®— C:\Users\username\AppData\Roaming\MathWorks\MATLAB Add-Ons*
*•Linux® — ~/MATLAB Add-Ons.*
*•macOS — ~/Library/Application Support/MathWorks/MATLAB Add-Ons*
*•MATLAB Online™ — /MATLAB Add-Ons*
*To change the default installation folder, on the **Home** tab, in the **Environment** section, click **Preferences** > **MATLAB** > **Add-Ons**. Then, in the **Installation Folder** field, specify a folder name to which you have write access.*
*If you change the default installation folder, add-ons installed in the previously selected folder are no longer accessible from within MATLAB. Changing the default installation folder or customizing installed add-ons is not supported in MATLAB Online." (MATLAB Documentation)*

For more information: https://www.mathworks.com/help/matlab/matlab_env/get-add-ons.html

# Pre - Use

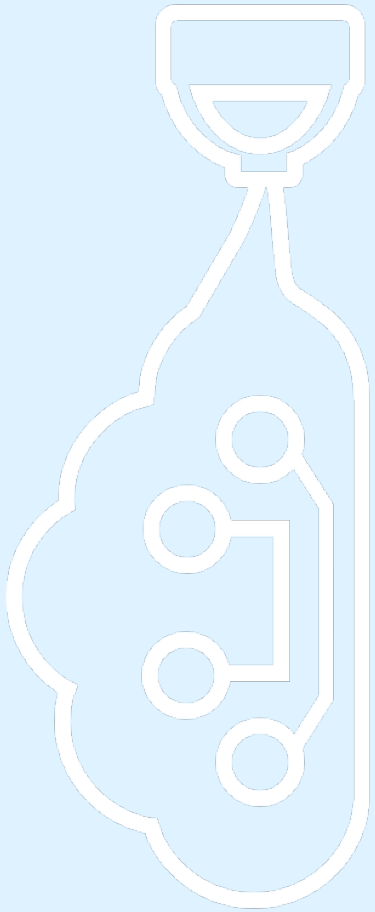
Step 1 – install MaozAnalyzer into MATLAB APP

Step 2 – open MaozAnalyzer in MATLAB apps

Step 3 – change the recording file you want to analyze to an H5 file.

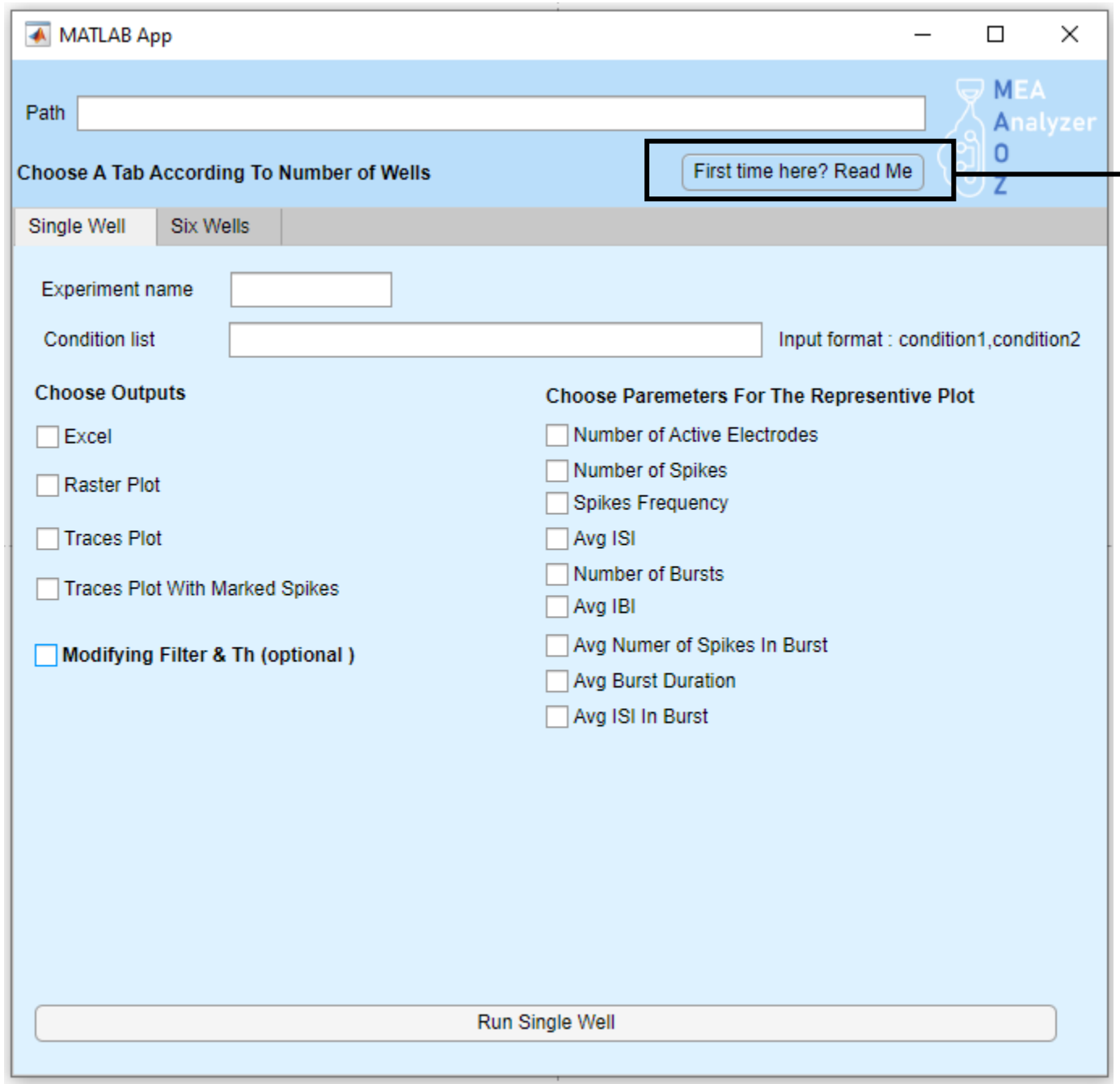
You can use “Multi Channel DataManager”

https://www.multichannelsystems.com/software/multi-channel-datamanager



MEA Analyzer

MAOZ




If this is your first time using the app, click here for help

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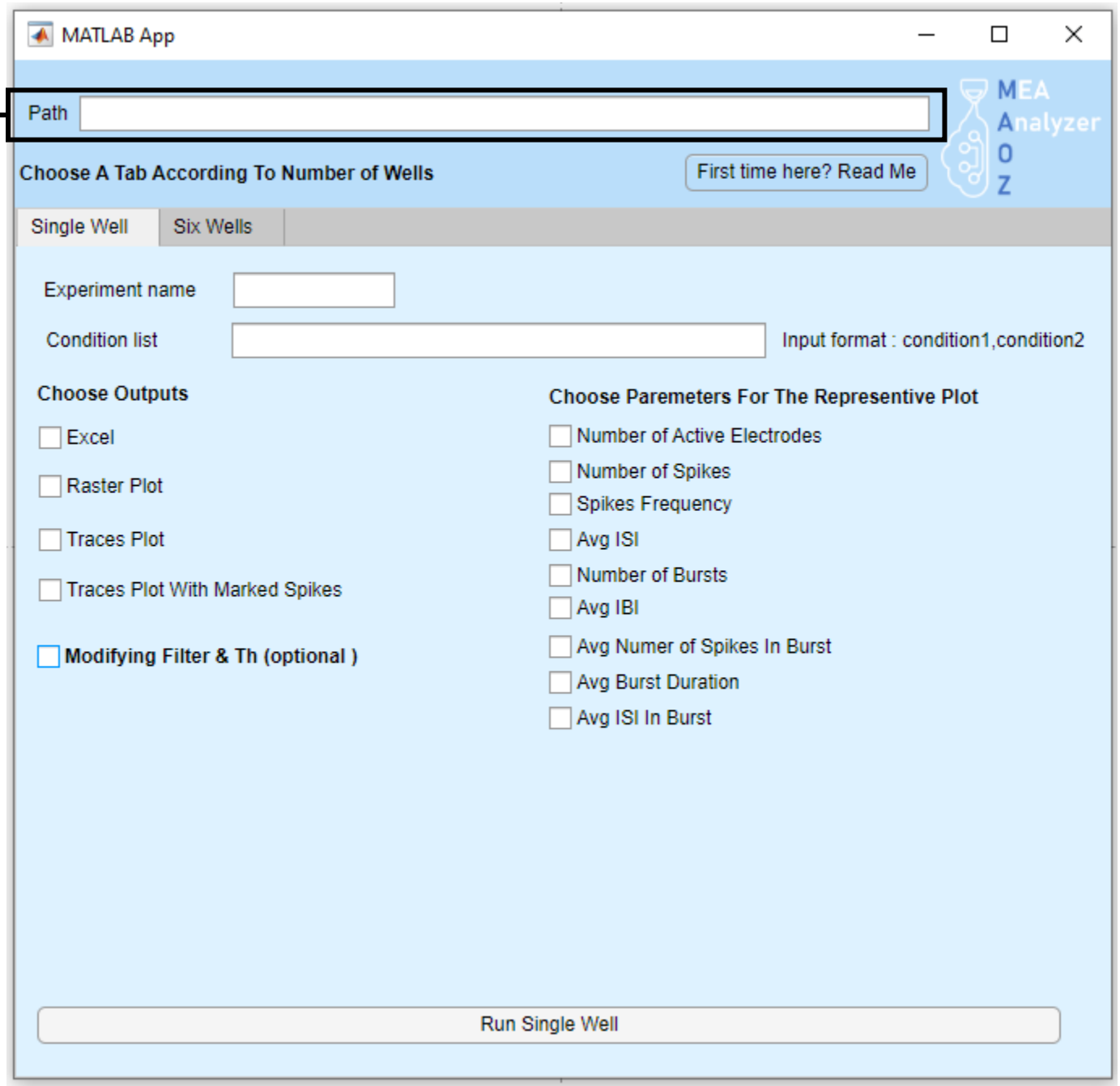
Copy & paste the path to the folder where the H5 recordings are located.

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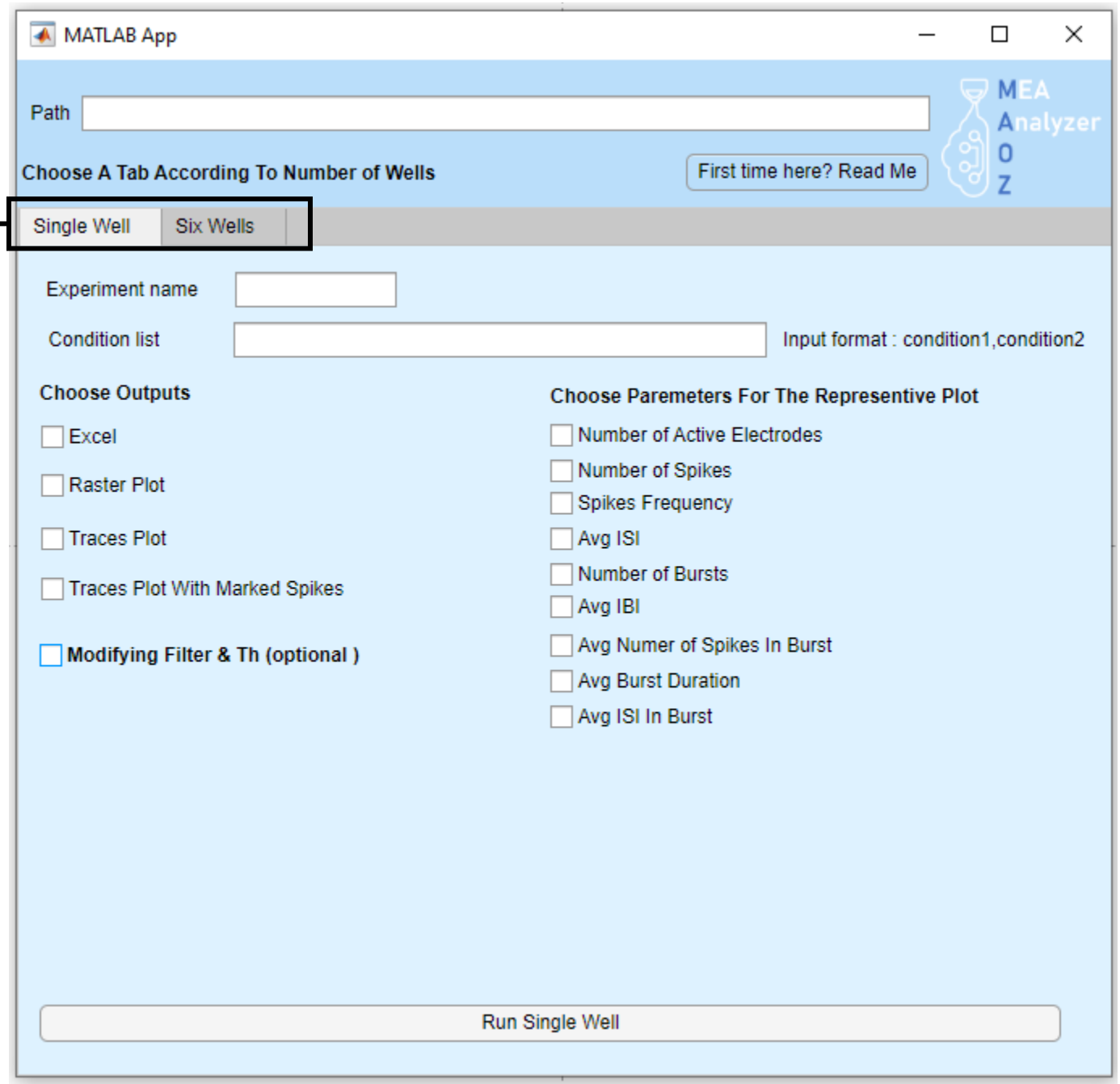
Based on the MEA plate you use to record, choose the relevant option

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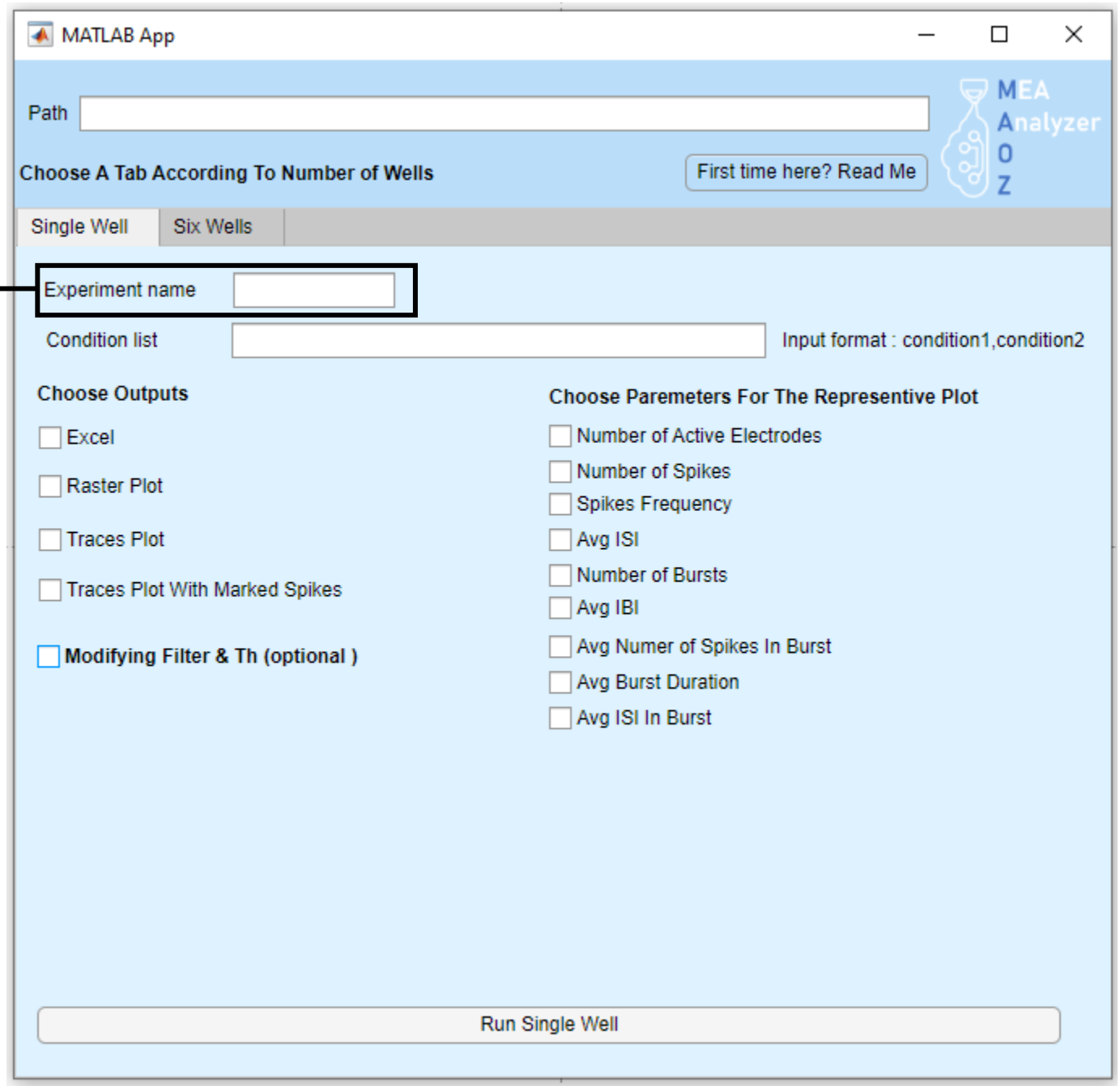
This is the name of the experiment.

It will be the name of the result folder and Excel file.

*Warning*

Don’t run the same recording on the same experiment name twice
It will run over the old results

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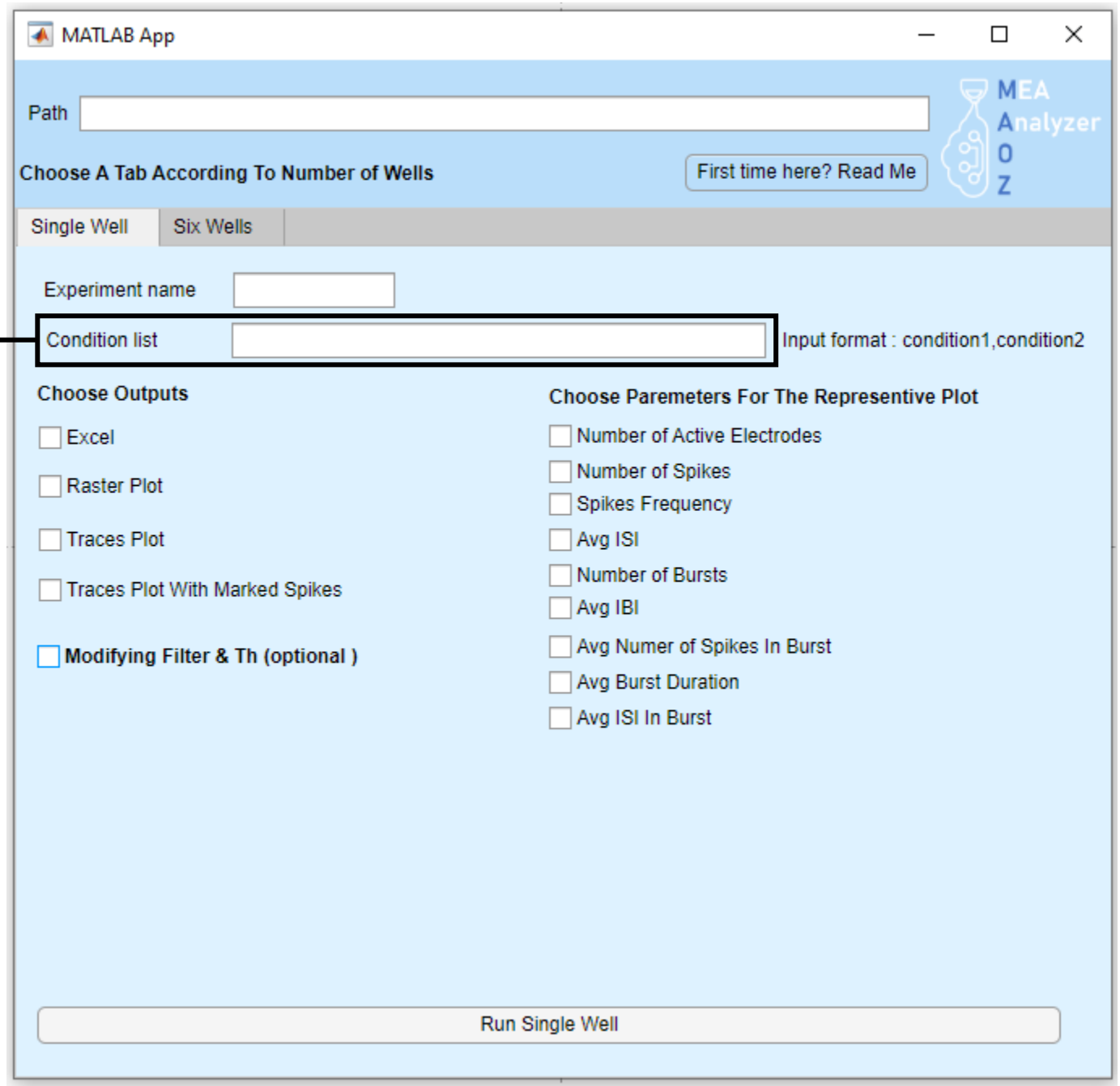
Condition list according to the recording.

- The number of conditions needs to much the number of recording
- The condition order is based on the alphabet order of the recording.

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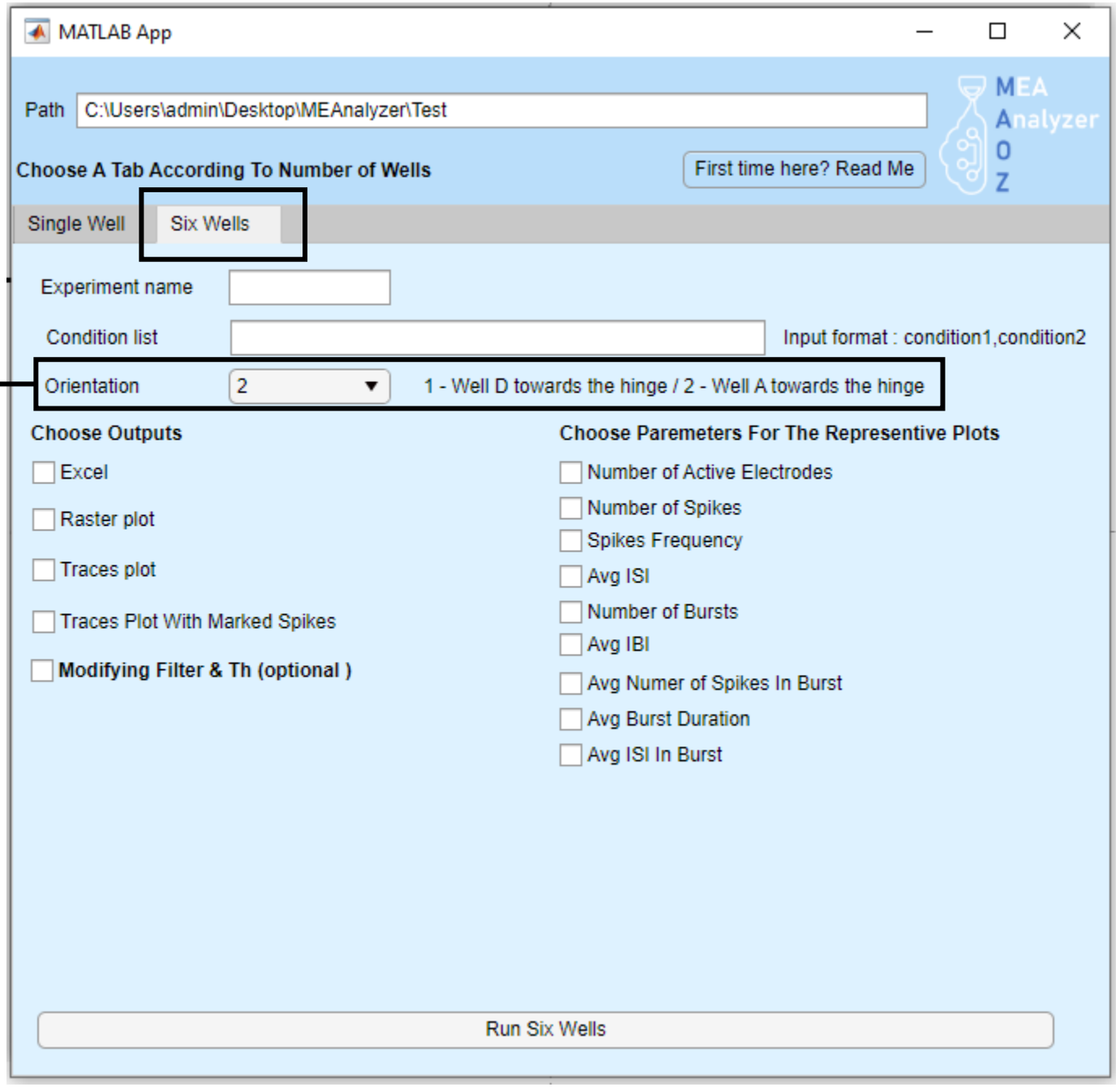
If six well option was marked

Choose the orientation of the MEA plate (during the recording)

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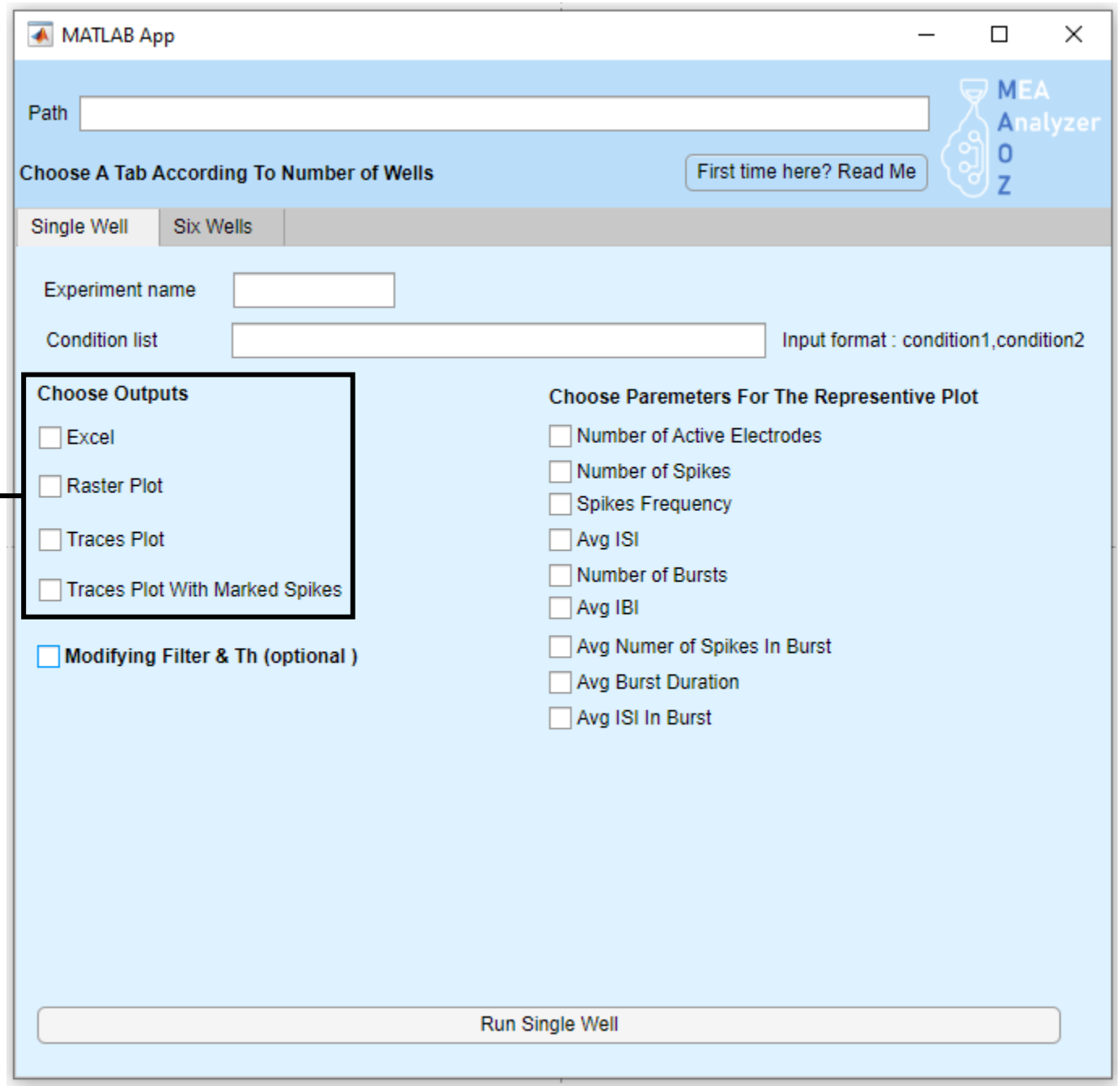
Choose the results output you want

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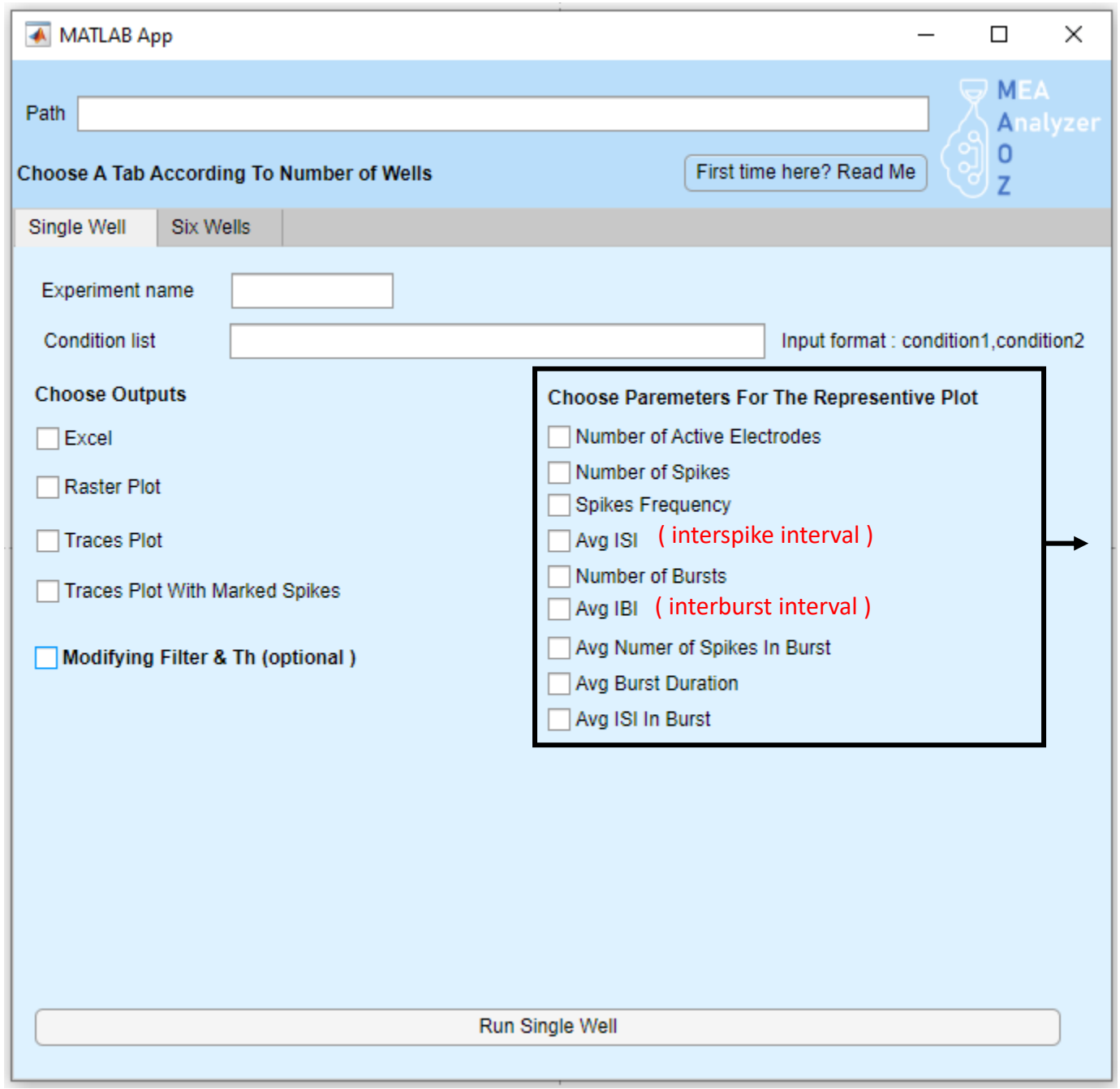


Choose what representative plot of the parameter you want to see (optional)

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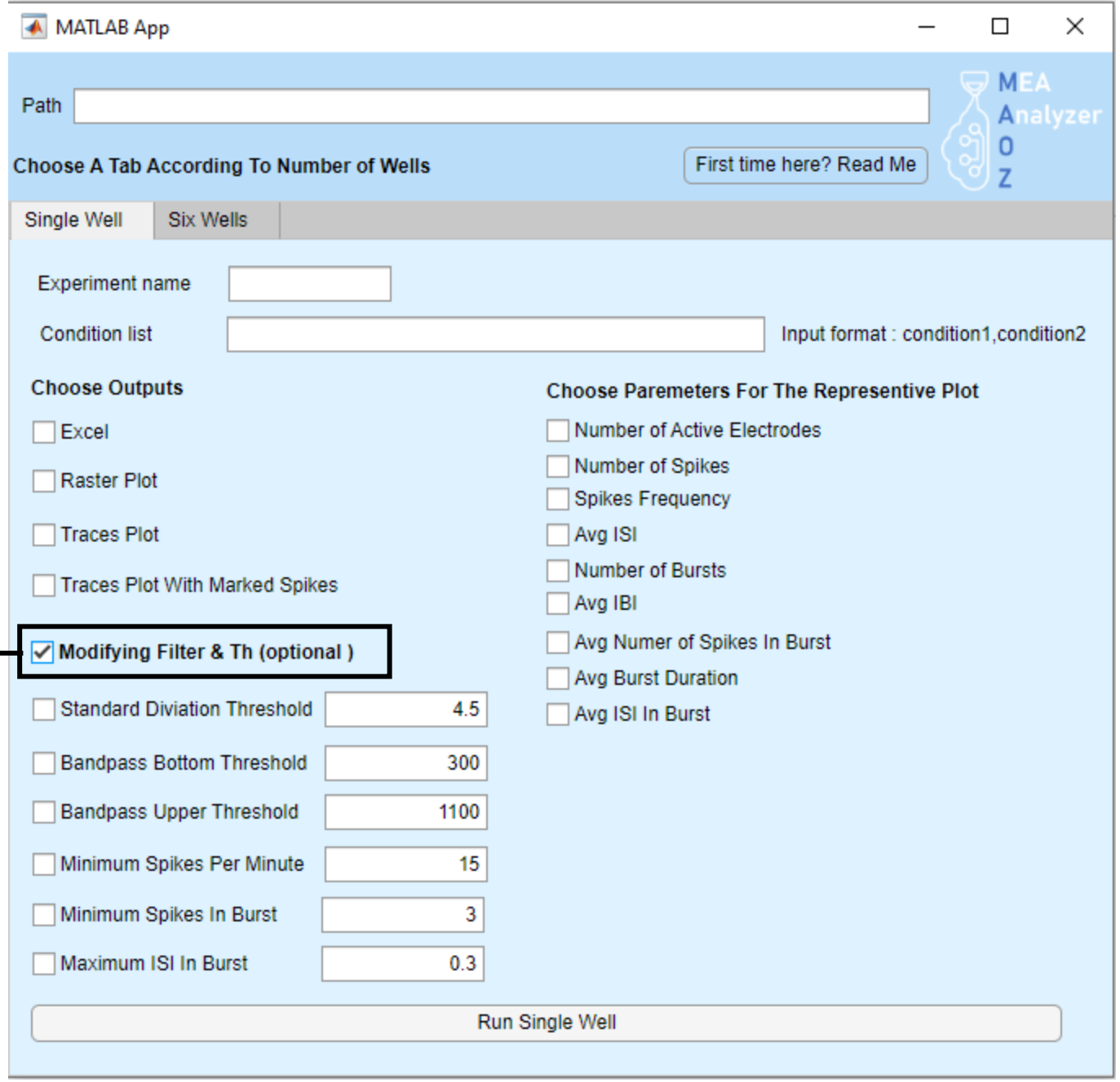
If needed, you can adjust some of the analysis parameters to fit your data

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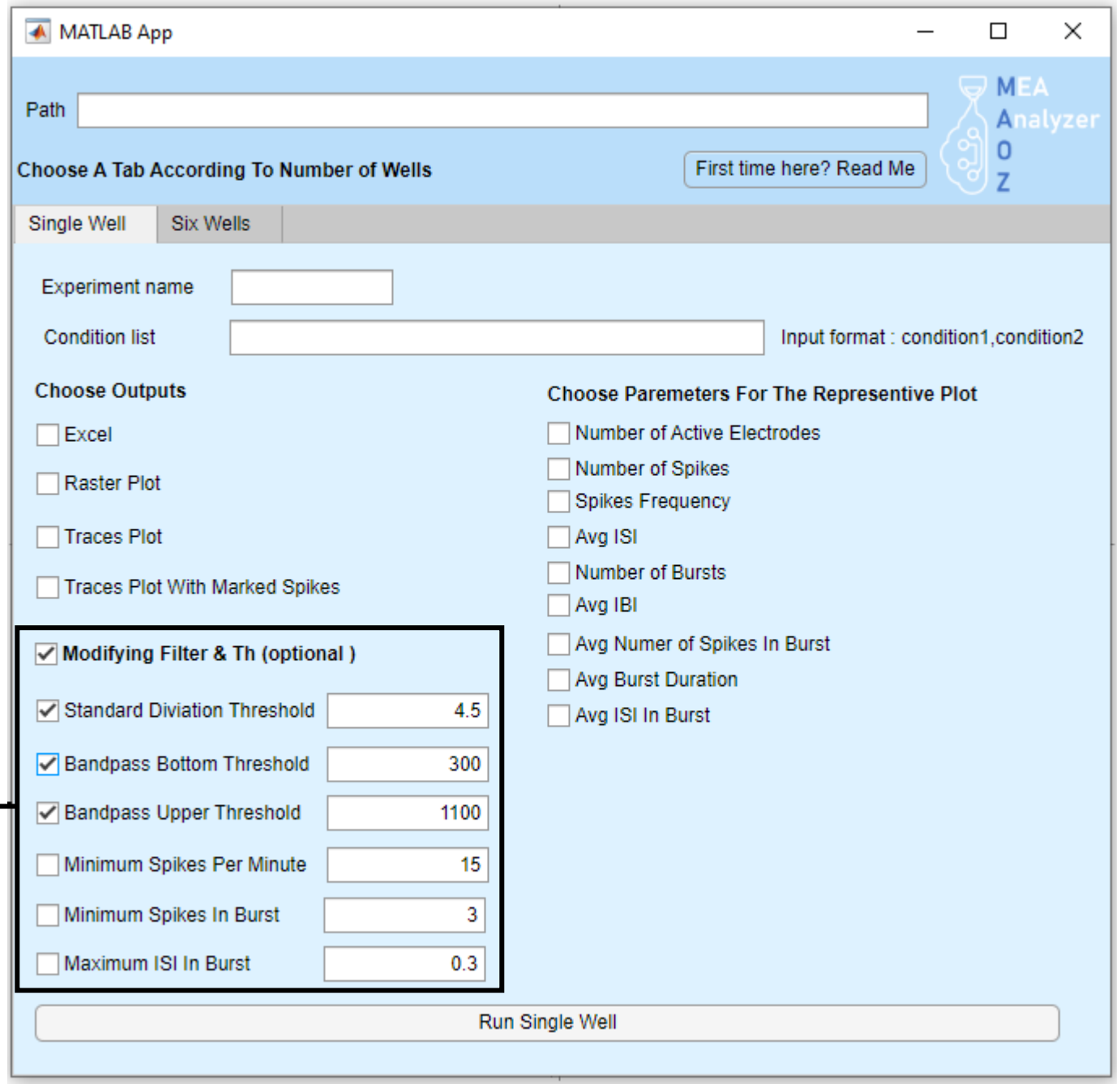
For a parameter to be changed, it needs to be marked.

If not, the analysis will run with the default parameters (writing in the app)

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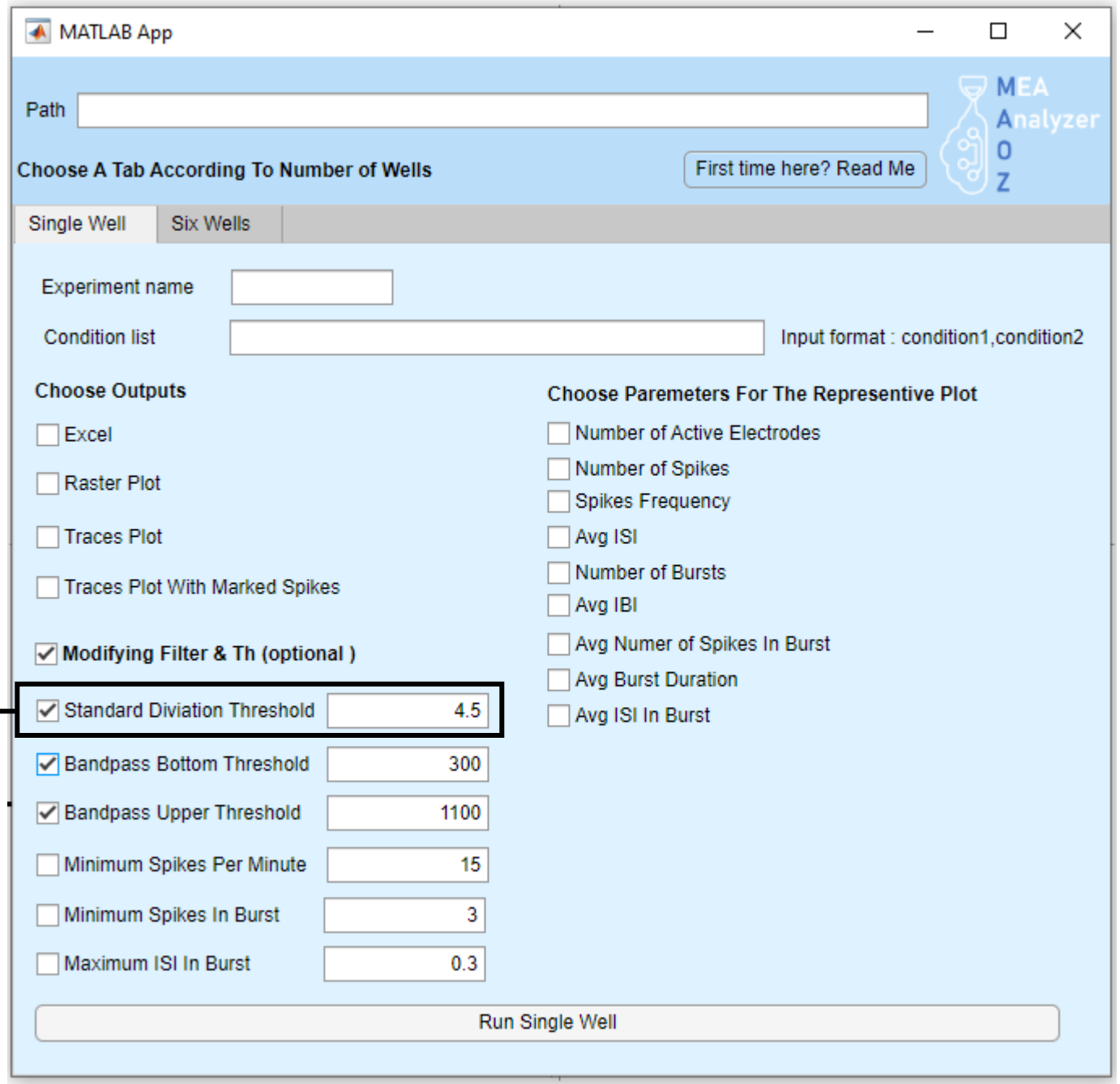
Parameter explain

The app will detect a spike if its amplitude is higher than the average of the signal + *4.5* times STD.

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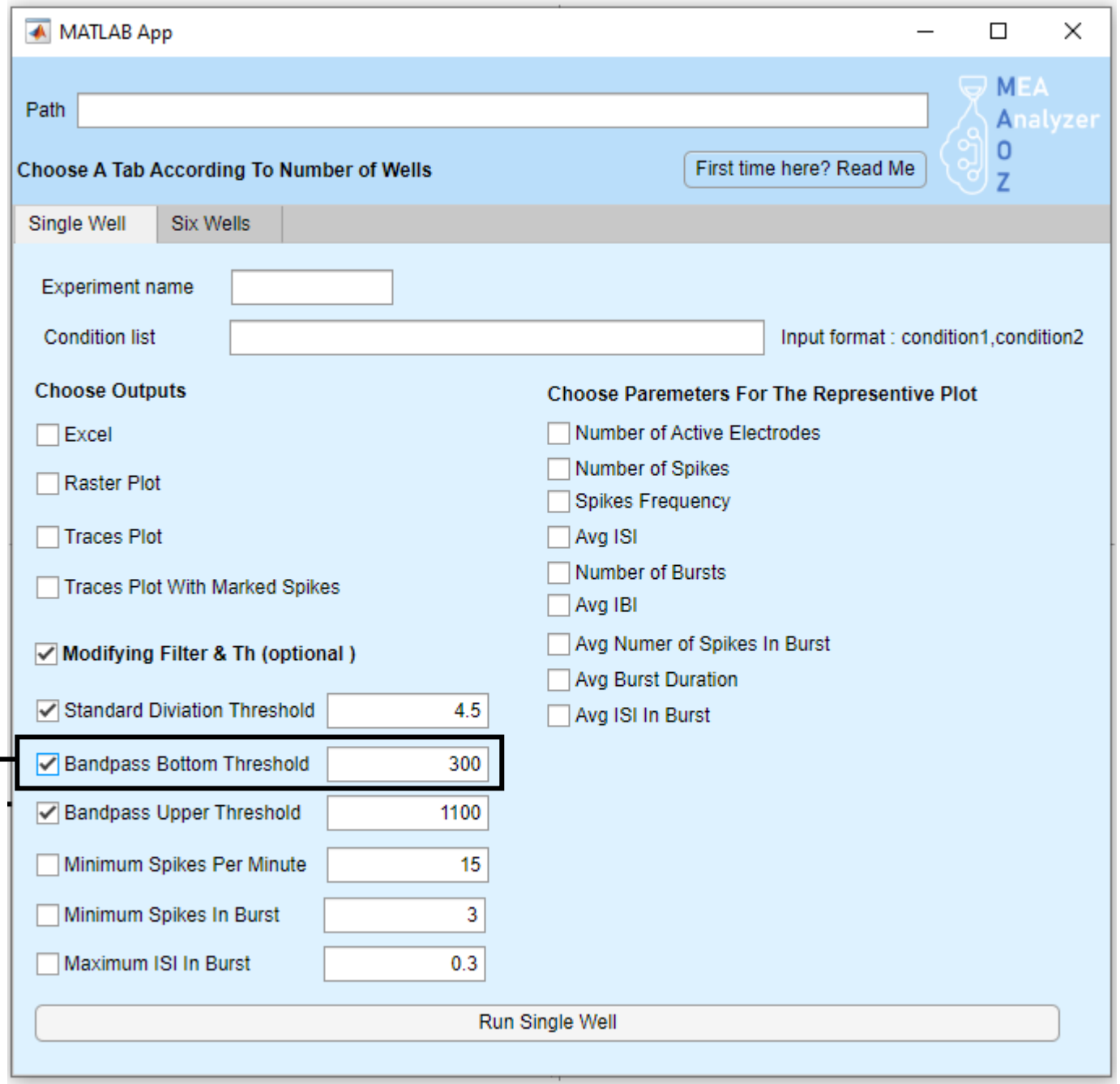
Parameter explain

Bottom frequency of the filter. Any signal under this value will be filter.

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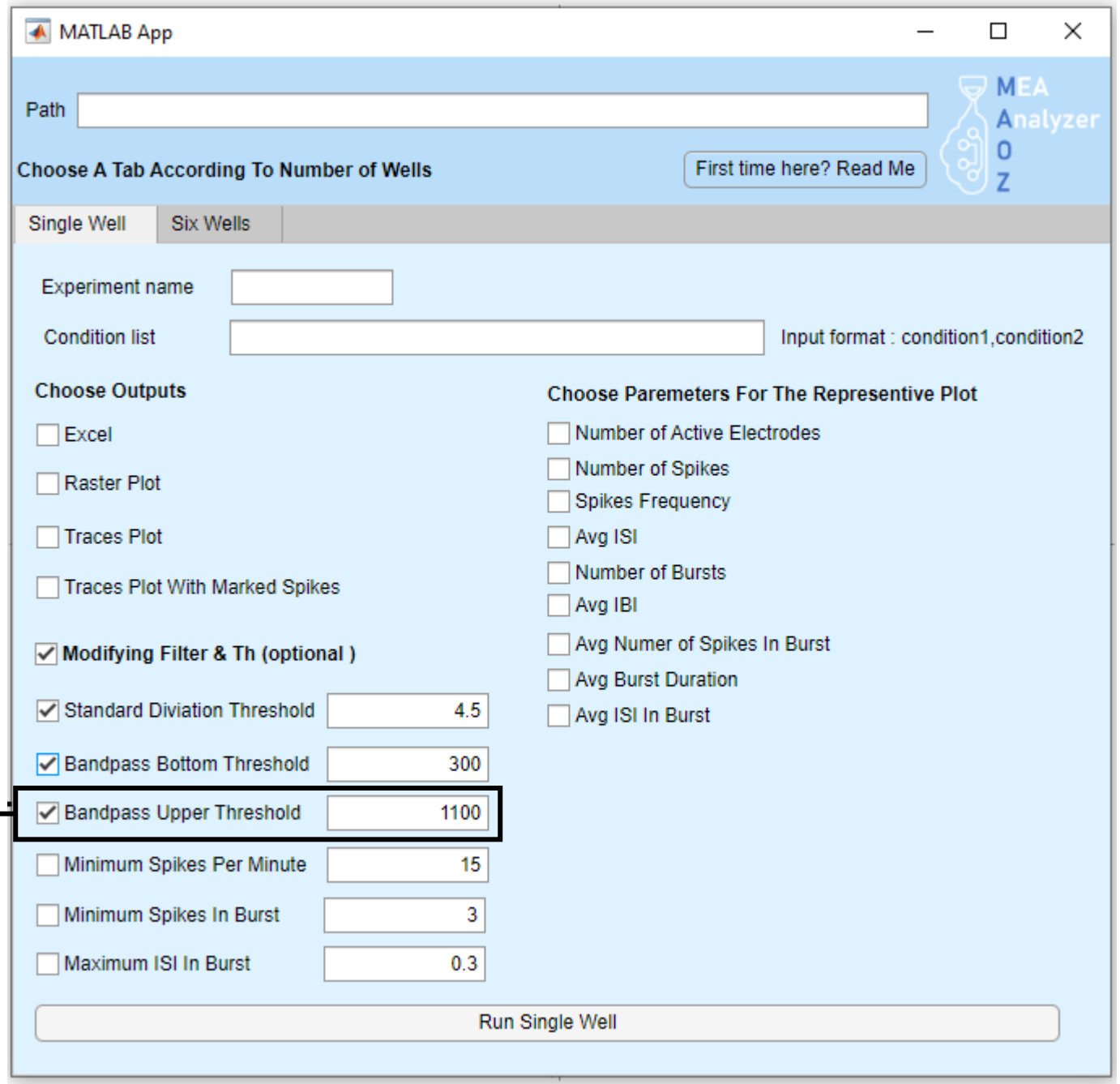
Parameter explain

Upper frequency of the filter. Any signal above this value will be filtered out.

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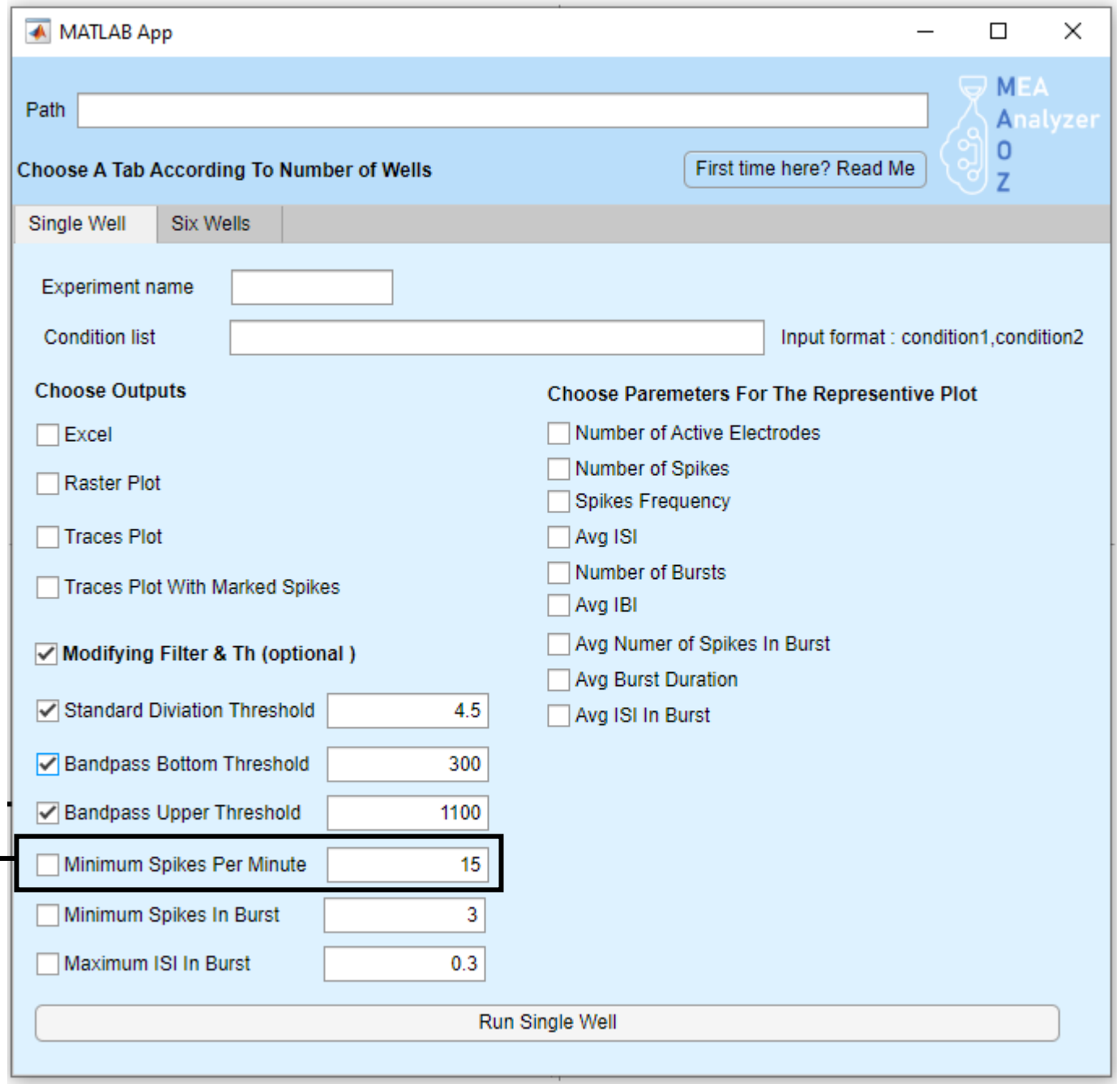
Parameter explain

Definition of active electrodes.

Any electrode with less than this value will not be count in the analysis

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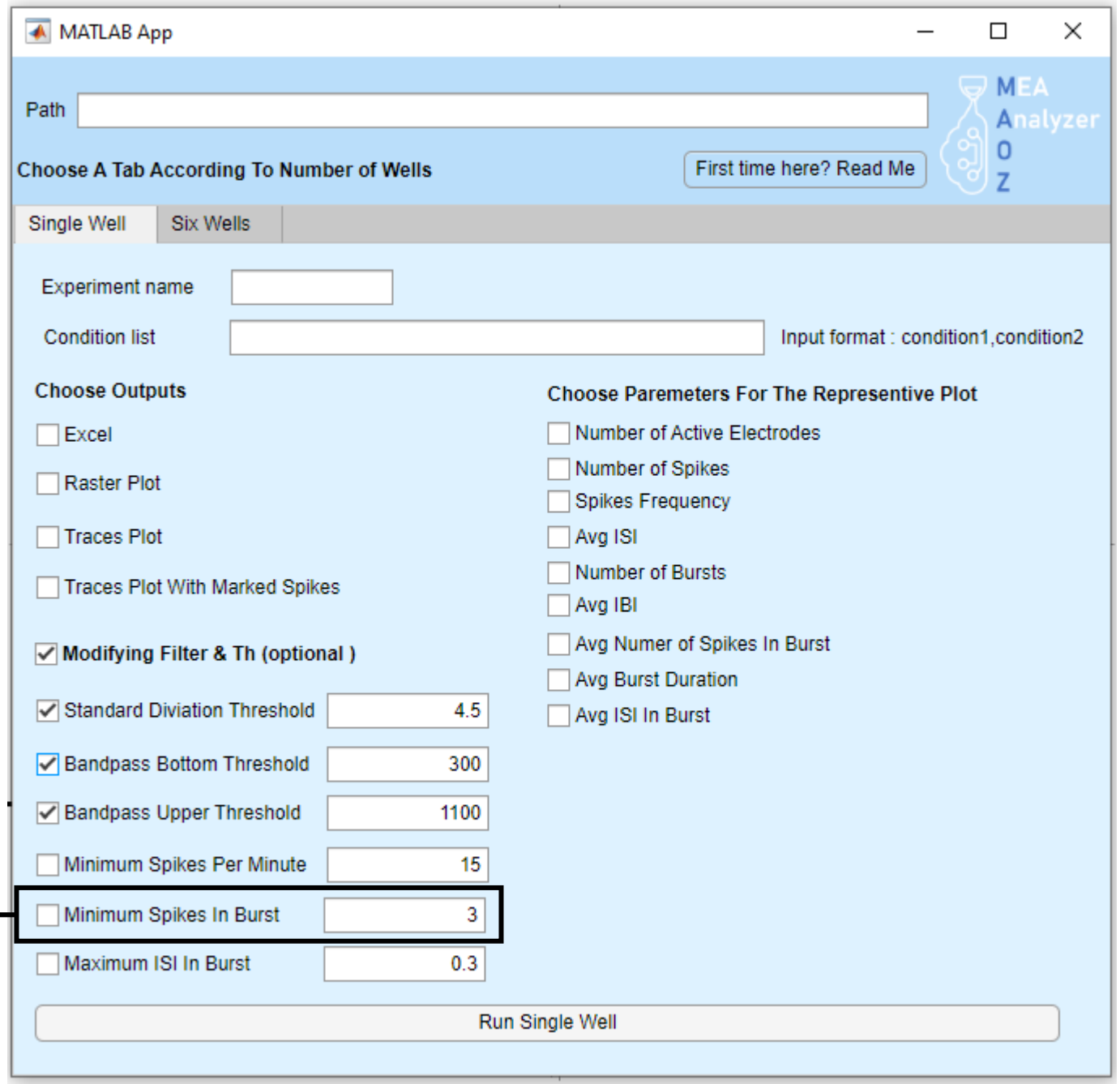
Parameter explain

Definition of burst

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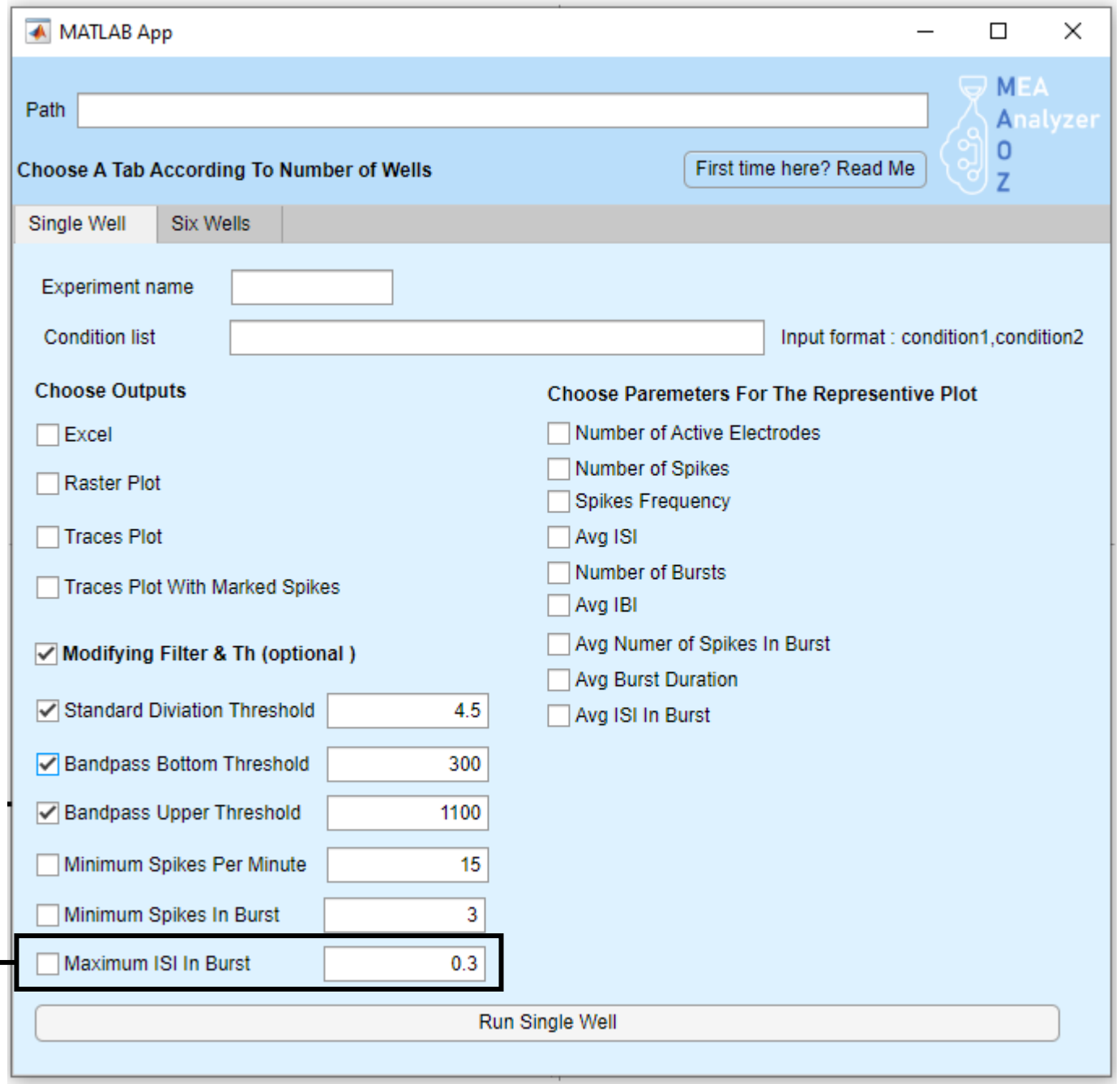
Parameter explain

Definition of burst

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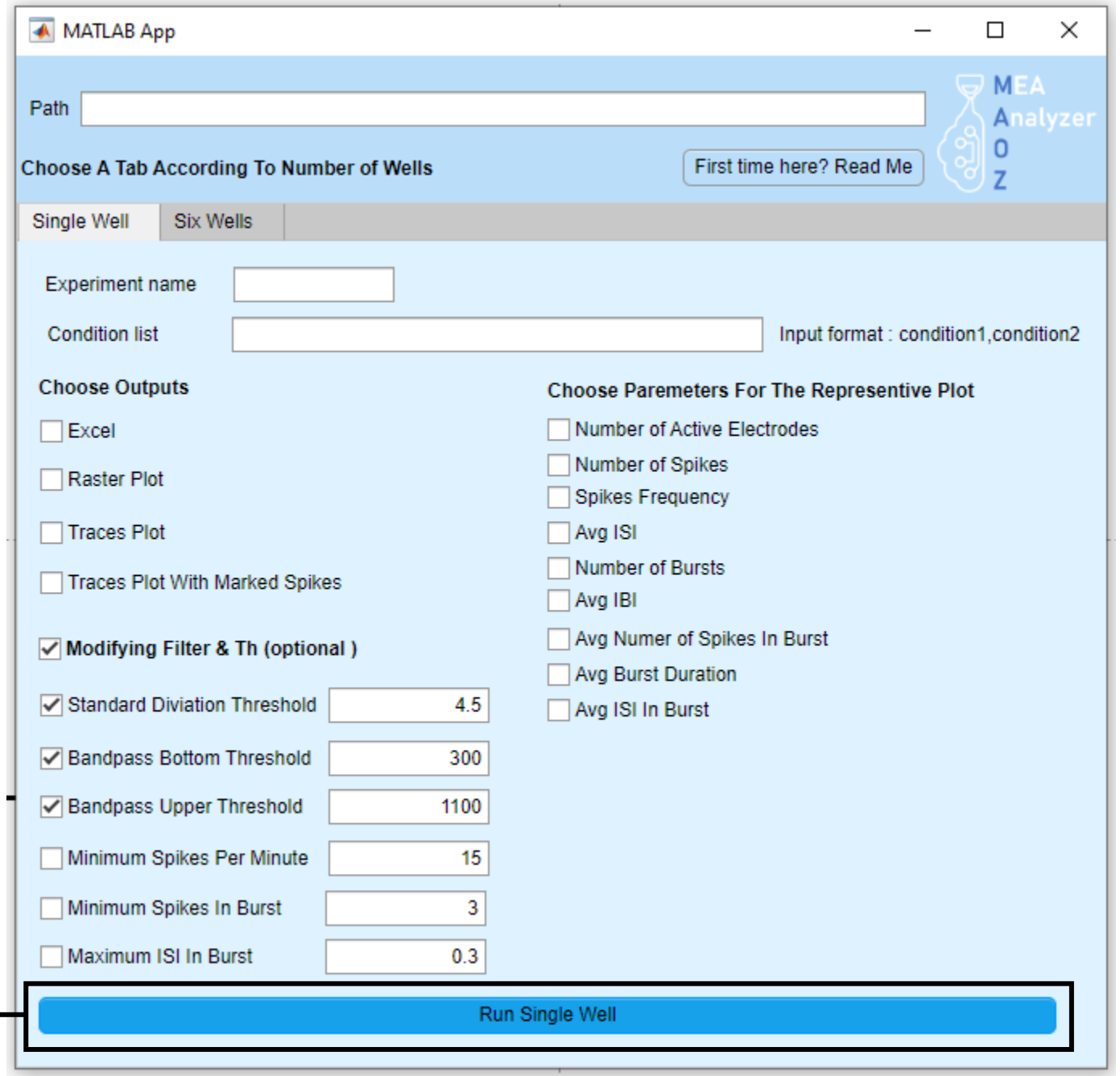


Click run to run the program

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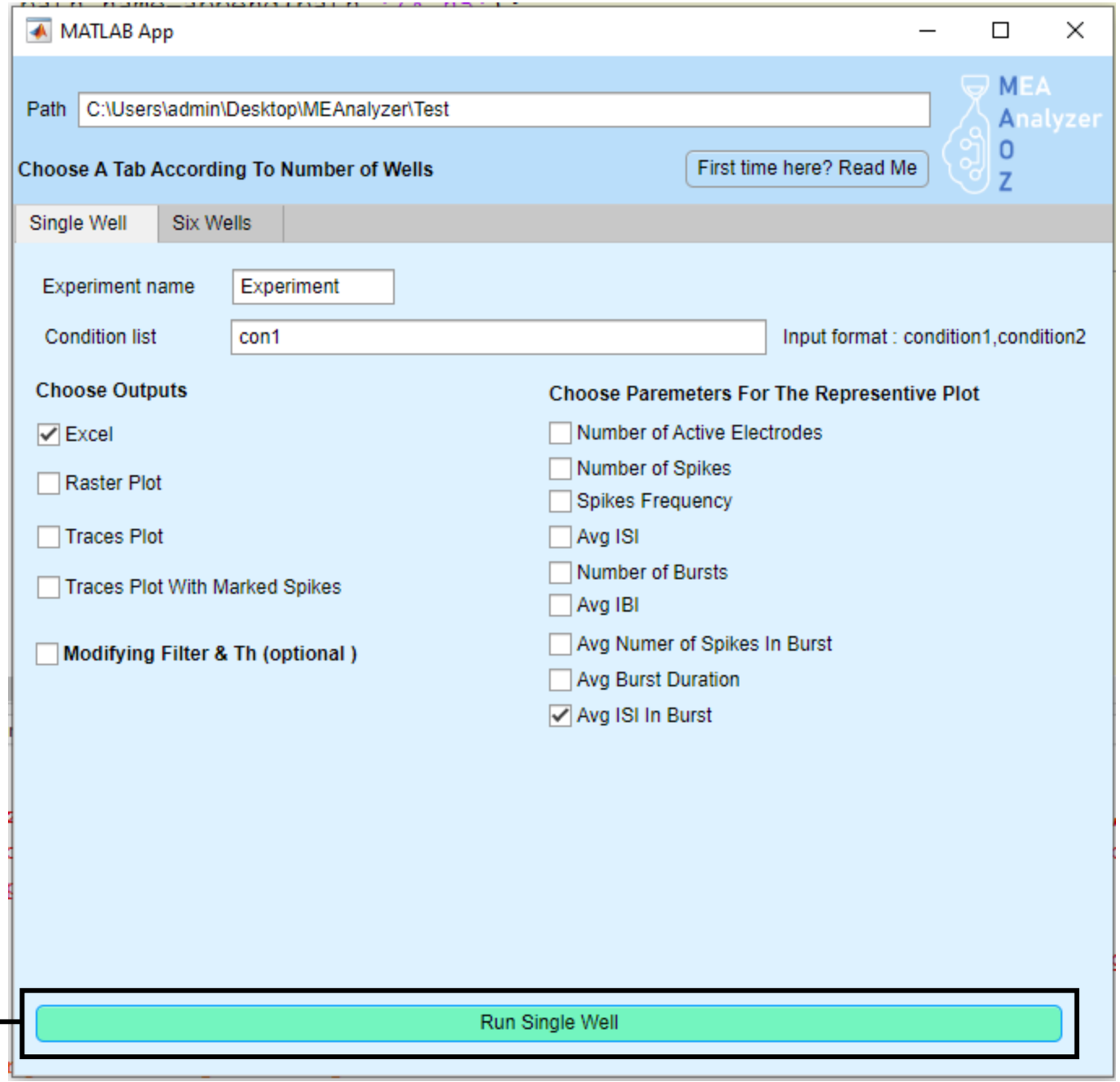


Once it is finished the bottom will turn green

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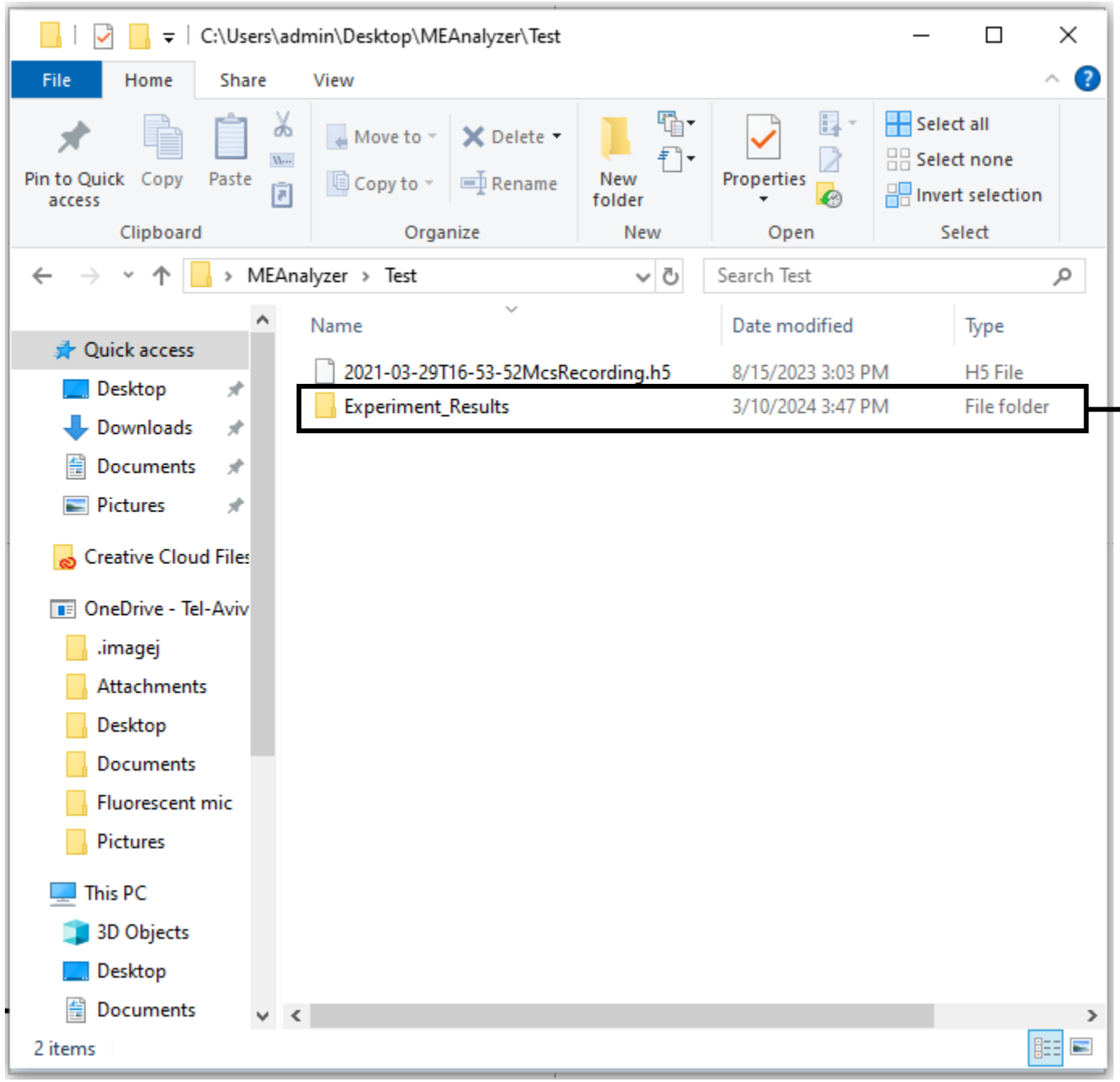


New folder will be created holding all the results

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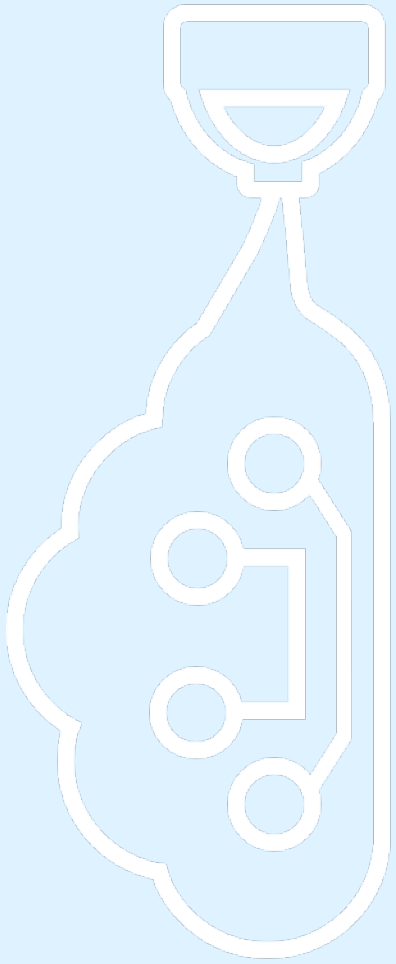

# MEA Analyzer

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For additional help
contact MaozLab