plusTipGroupAnalysis

This document explains how to use the plusTipGroupAnalysis interface.

1) Load project(s)
2) Set up some groups for analysis
3) Run analysis tools

TABLE OF CONTENTS

Select project(s)

This step allows you to choose one or more projects (i.e. roi_1 folders) for analysis. You may analyze many movies as a batch, provided they should use the same control parameter set.
If "Load projList" is checked, you will be asked to select one or more projList.mat files containing the directory paths to various projects you have previously created. This is a shortcut, as generating the project list can be time-consuming with large directory trees.
The projList.mat file is generated by the getProj function, which is called during project setup from plusTipAnalysis. You can also run getProj from the command line to generate more specific project lists. (see function header for details.) If "Load projList" is unchecked, you will select a parent directory containing previously-created projects.
If "Narrow down list" is checked, a window will pop up asking for one or more search strings. These are strings of characters that can be used to narrow down the number of projects you have to scroll through when selecting from a long list. For example, if "ctrl" appears anywhere in the file path to your control movies, you may enter "ctrl" into the search string list. Only those projects matching all the query strings will appear. If "Narrow down list" is unchecked, this step is bypassed and all the projects will appear in the list.
From the resultant list of projects, select one or more and use the arrow to move them from the left to the right. The selected projects will be loaded into the Matlab workspace as a cell array in case you want to reference them.

Create group(s)

Groups of selected projects can be created using the "Create Group(s)" button. The output is a file called "groupList," which can be then loaded using the “Load existing group(s)” button.

f your data is arranged in a data hierarchy such that projects from different groups are stored at the same level, you may generate groups automatically by checking "Auto group from hierarchy." You will be prompted to select which levels of the directory tree should be used to create unique group names. If this option is unchecked, you will be prompted to choose groups of projects and name them. Avoid using spaces and hyphens in the group names.

Select output directory

This button allows you to choose a directory where to save the output of the analysis tools (see below).

Pool data from groups

This panel allows the user to pool the data obtained from the post-processing of the plusTipGetTracks interface.

Remove tracks at the beginning or end of movie:

This allows you ?

Pool data within groups:

This drop-down menus allows to pool data within groups as well as between groups. In that case, a folder named “withinGroupComparisons” will be created under the main output directory and will contain as many folders as there are groups.

Save distribution as text files:

This allows you to create a text output for each .

Create histograms and boxplots:

This allows you to create histograms and boxplots for the pooled data. Graphical output will be generated for the speed, lifetime and displacement of the growth events, backward gaps and forawrd gaps respectively.

The histograms options allow you to add error bars to the histograms using either the standard deviation or the standard error of the group.

Post-processing statistics analysis

This panel allows the user to perform up to two statistical tests on all the statistics obtained from the post-processing in plusTipGetTracks.

First statistical test (resp. Second):
This drop-down menus allows the user to choose between a series of alternate statistical tests. The result of the test will be save in the output directory as “hitTest1.mat” (resp. hitTest2.mat”.)

Test stringency:
This allows the user to select a maximum threshold for the p-values calculated from the first statistical test. Histograms of the corresponding hits (*i.e.* the statistics fields p-value is lower than the stringency) will be generated and saved in the output directory.