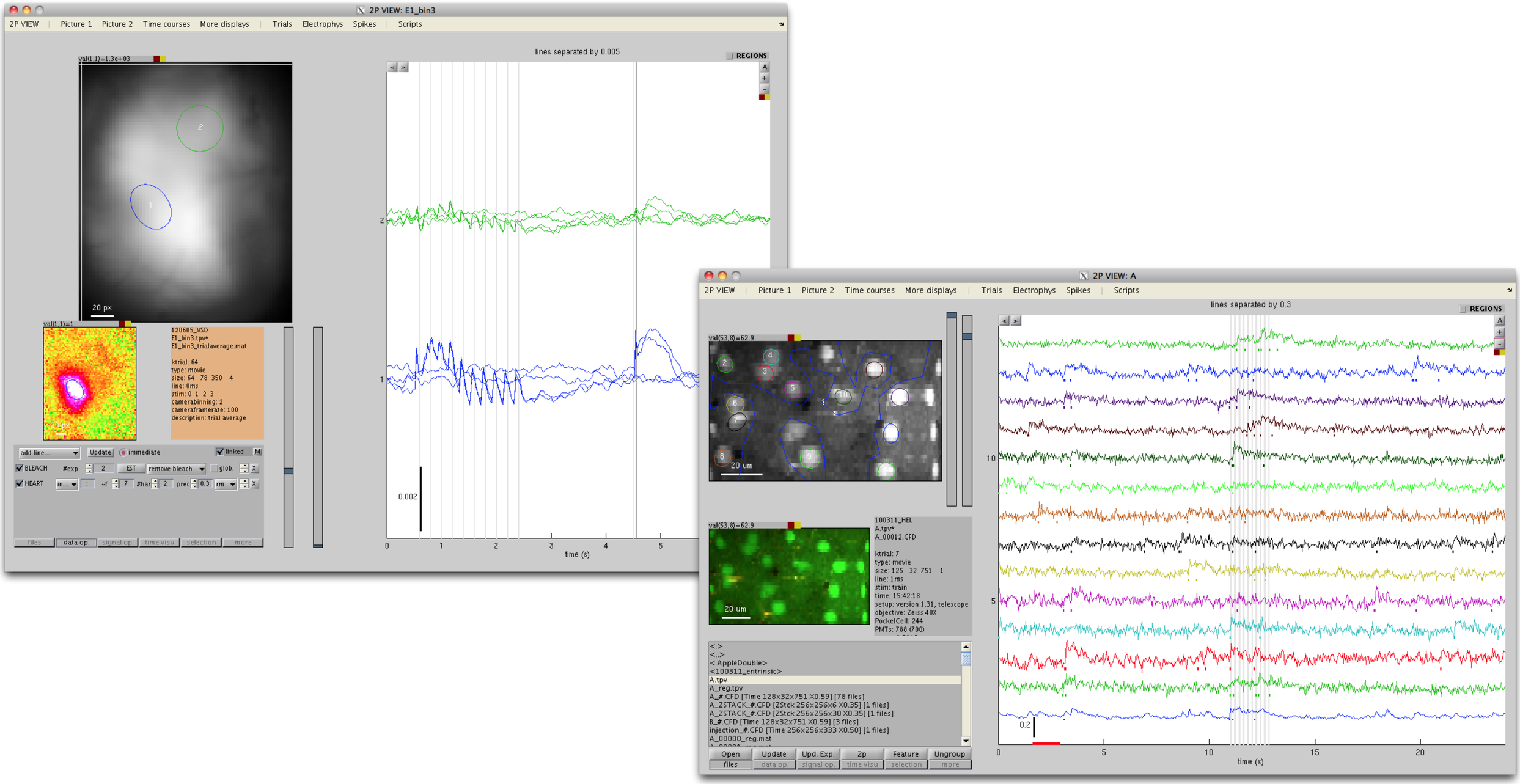
2PVIEW documentation



Installation

INSTALLATION

- Start Matlab
- Go in menu Files > Set path... and add the 4 directories 'brick', 'fn4Dtoolbox', 'twophoton' and 'oifun' (do not check the box ‘add sub-directories’)

START THE PROGRAM

- type tpview in the Matlab command

I. Quick Tour

1) Manipulation of the data
2) Display of the data
3) Other useful tools

1) Manipulation of the data

a. Open the data

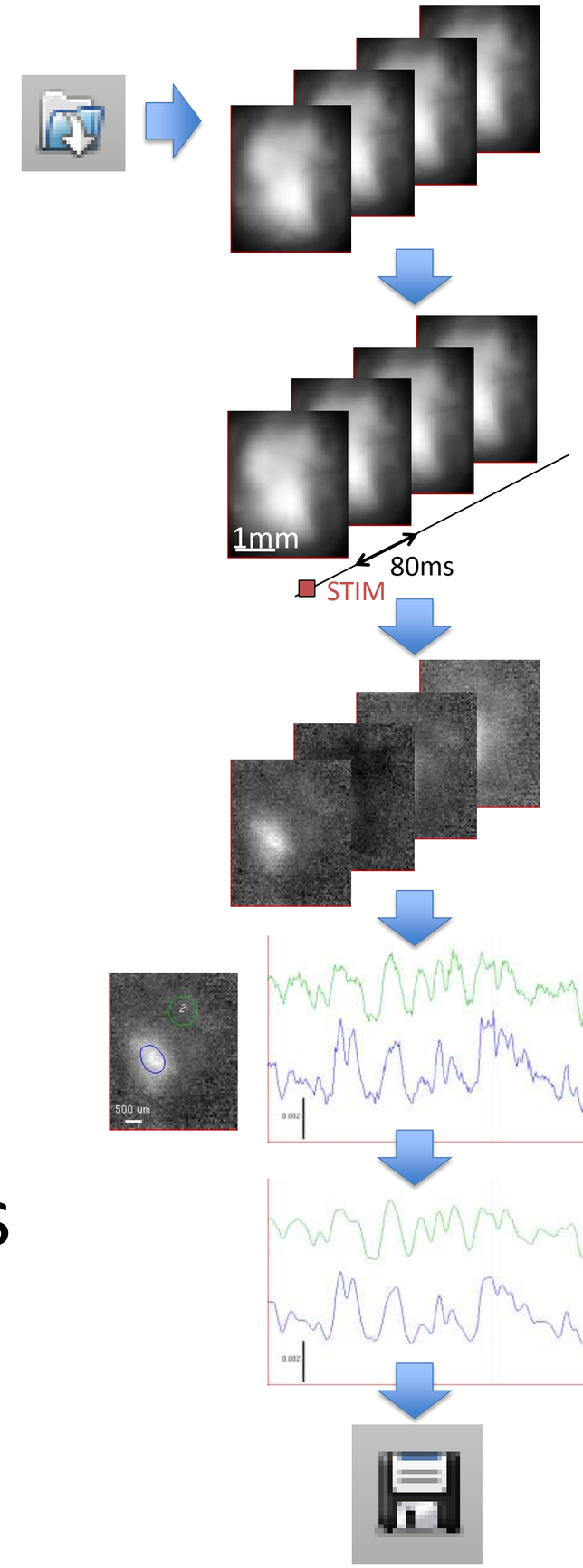
b. Header information

c. Operations on movie data

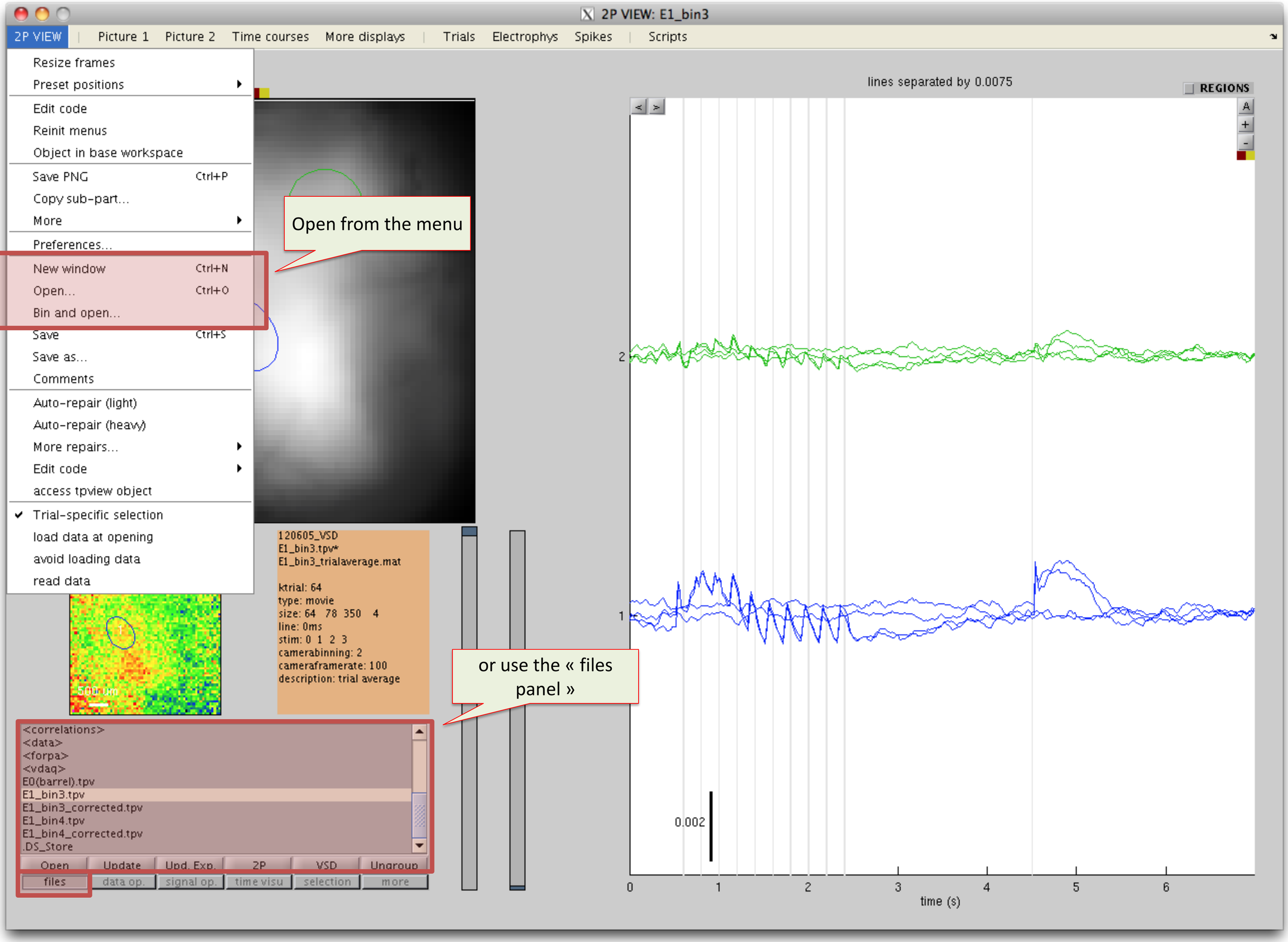
d. Extraction of time courses

e. Operations on time courses

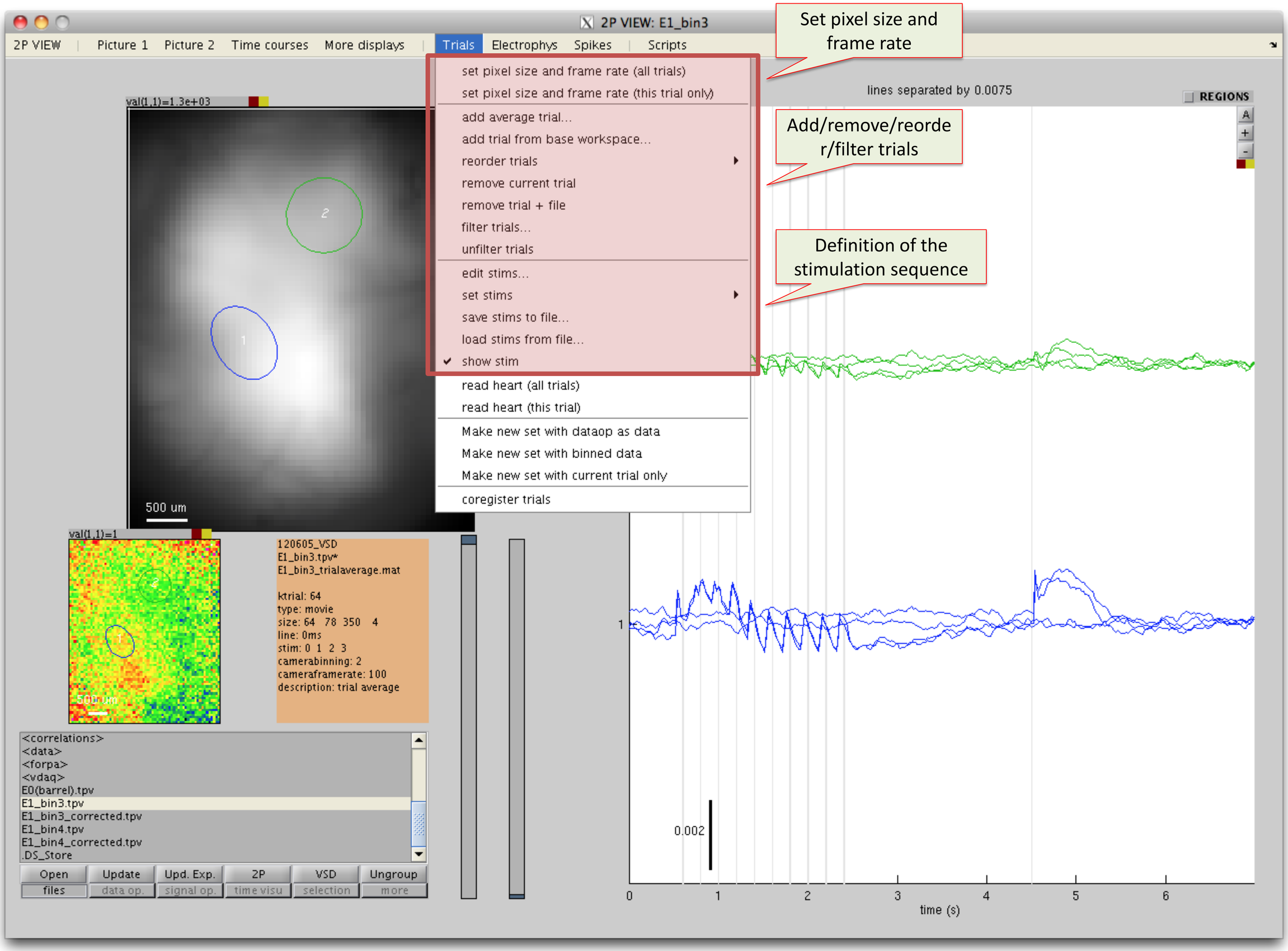
f. Save



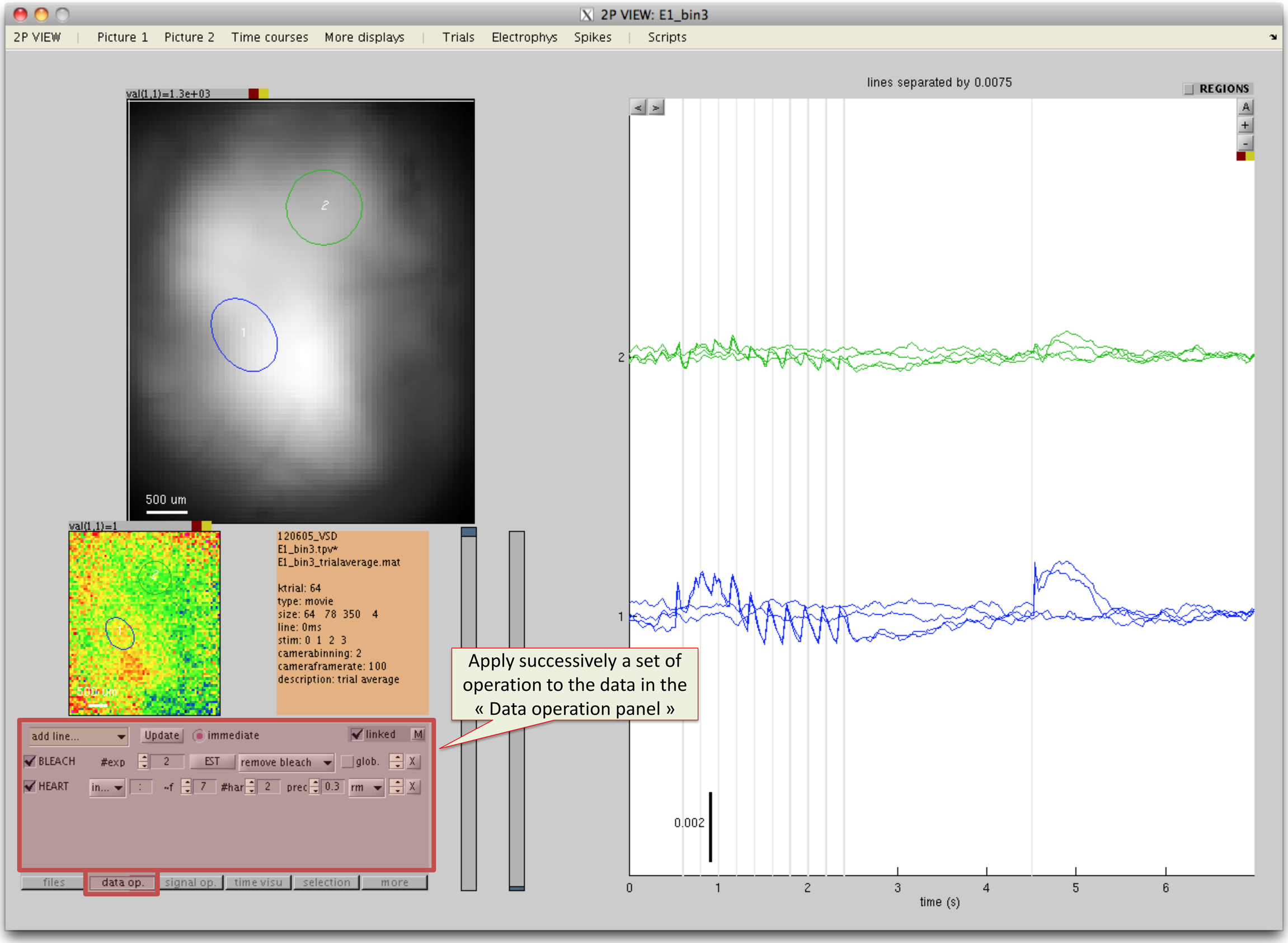
1)a. Open the data



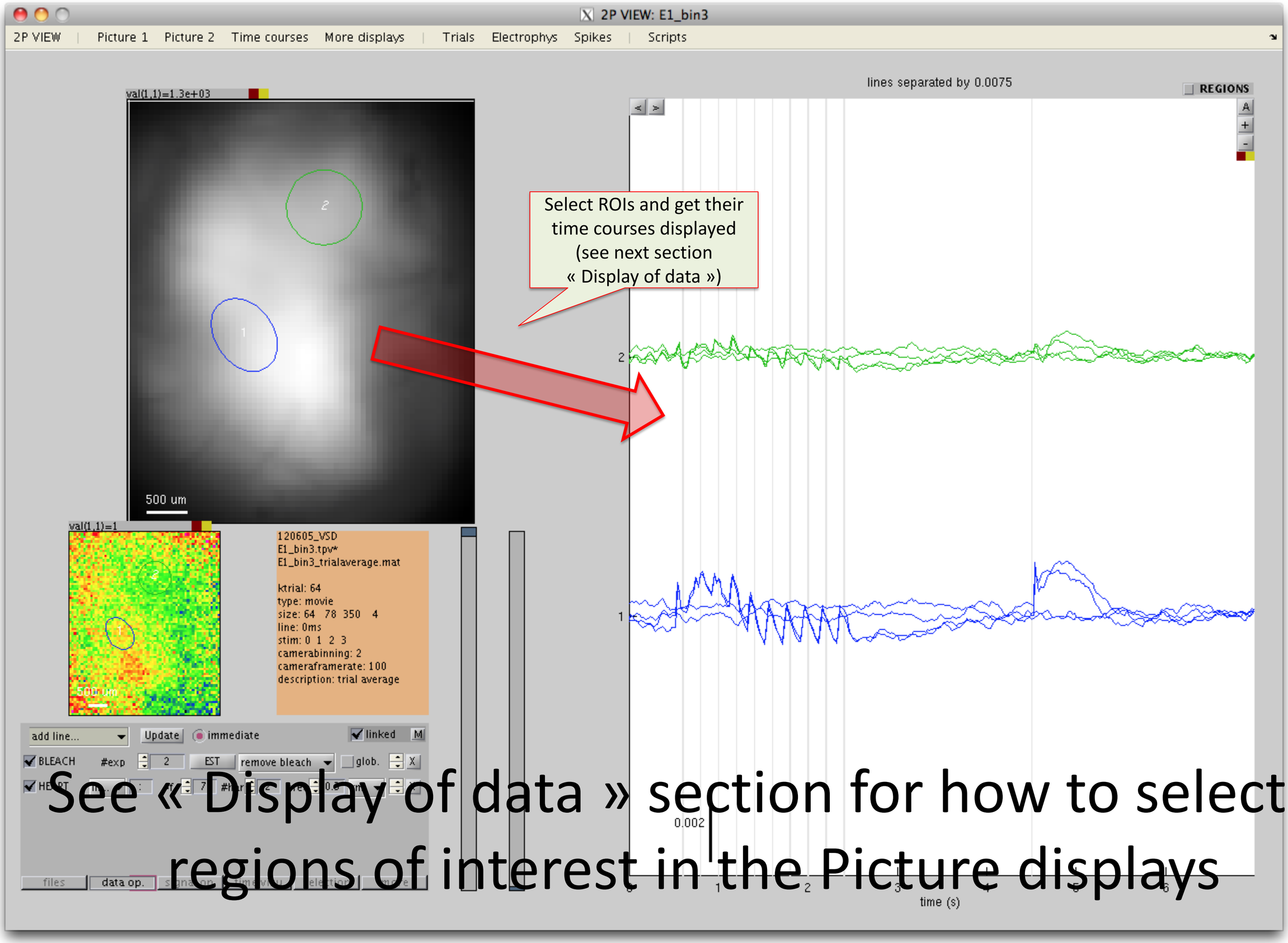
1)b. Header information



1)c. Operations on movie data

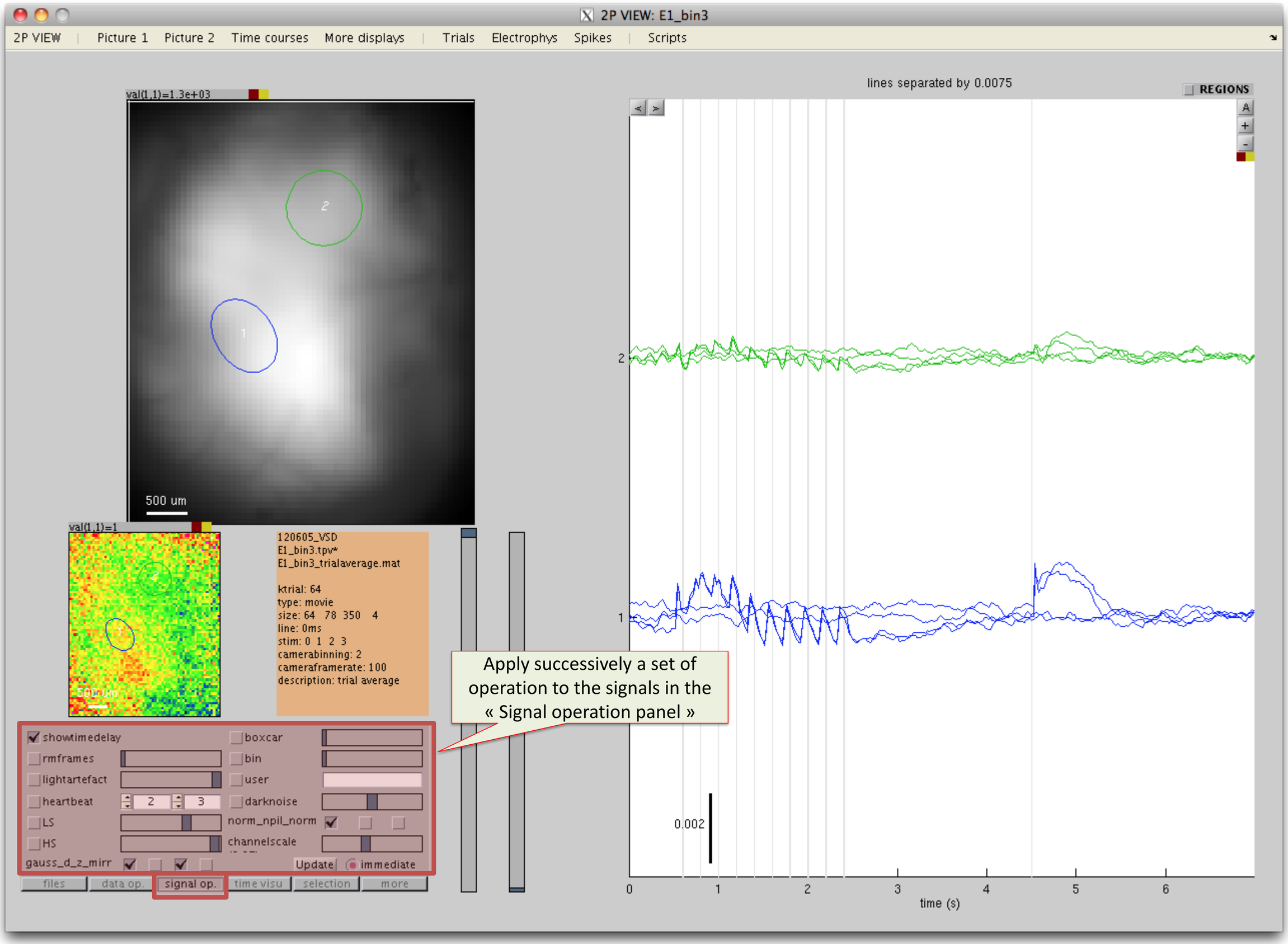


1)d. Extraction of time courses

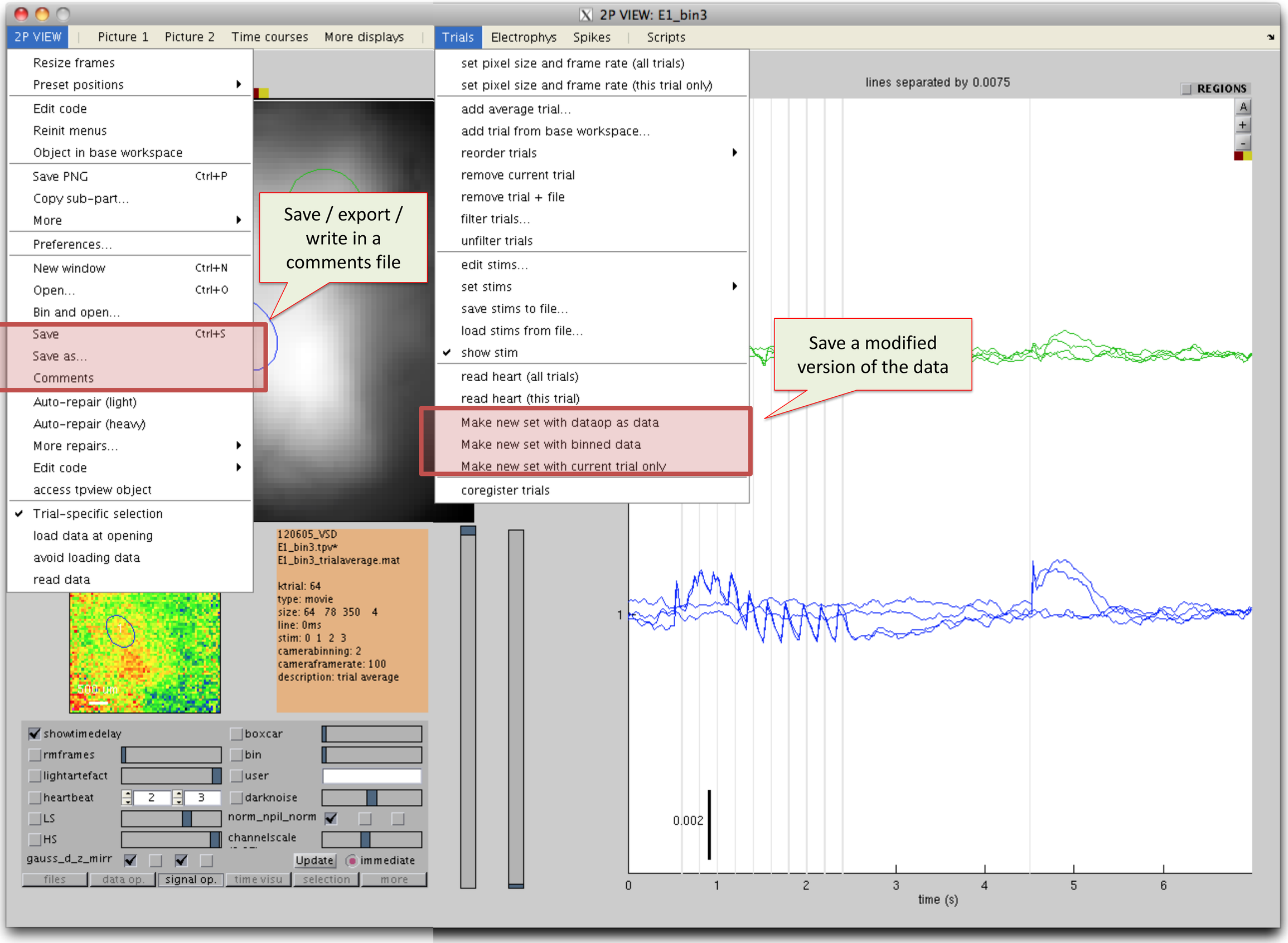


See « Display of data » section for how to select regions of interest in the Picture displays

1)e. Operations on time courses



1)f. Save


2P VIEW: E1_bin3
2P VIEW
Picture 1
Picture 2
Time courses
More displays
Trials
Electrophys
Spikes
Scripts
Resize frames
Preset positions
Edit code
Reinit menus
Object in base workspace
Save PNG Ctrl+P
Copy sub-part...
More
Preferences...
New window Ctrl+N
Open... Ctrl+O
Bin and open...
Save Ctrl+S
Save as...
Comments
Auto-repair (light)
Auto-repair (heavy)
More repairs...
Edit code
access tpview object
Trial-specific selection
load data at opening
avoid loading data
read data
Save / export / write in a comments file
set pixel size and frame rate (all trials)
set pixel size and frame rate (this trial only)
add average trial...
add trial from base workspace...
reorder trials
remove current trial
remove trial + file
filter trials...
unfilter trials
edit stims...
set stims
save stims to file...
load stims from file...
show stim
read heart (all trials)
read heart (this trial)
Make new set with dataop as data
Make new set with binned data
Make new set with current trial only
coregister trials
Save a modified version of the data
lines separated by 0.0075
REGIONS
A
+
-
120605_VSD
E1_bin3.tpv*
E1_bin3_trialaverage.mat
ktrial: 64
type: movie
size: 64 78 350 4
line: 0ms
stim: 0 1 2 3
camerabinning: 2
cameraframerate: 100
description: trial average
500 µm
showtimedelay
rmframes
lightartefact
heartbeat
LS
HS
gauss_d_z_mirr
boxcar
bin
user
darknoise
norm_npil_norm
channelscale
Update
immediate
files
data op.
signal op.
time visu
selection
more
1
0.002
0
1
2
3
4
5
6
time (s)

2) Display of the data

a. Which displays are available?

b. What to show in each display?
   - Picture1 and Picture2
   - Time Courses

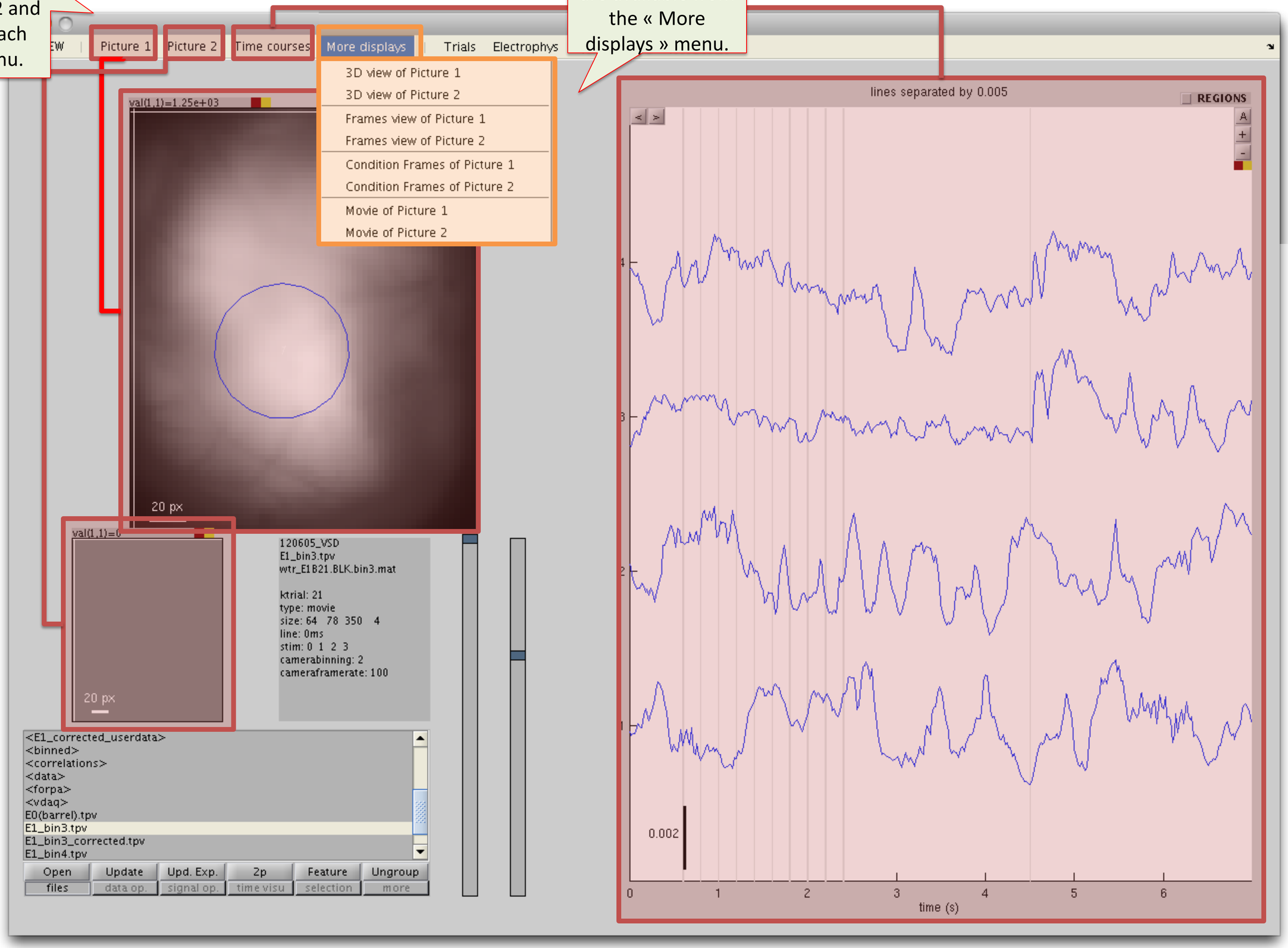
c. Display options
   - Picture1 and Picture2
   - Time Courses

d. Mouse actions
   - Principles of region selection
   - Table of mouse actions

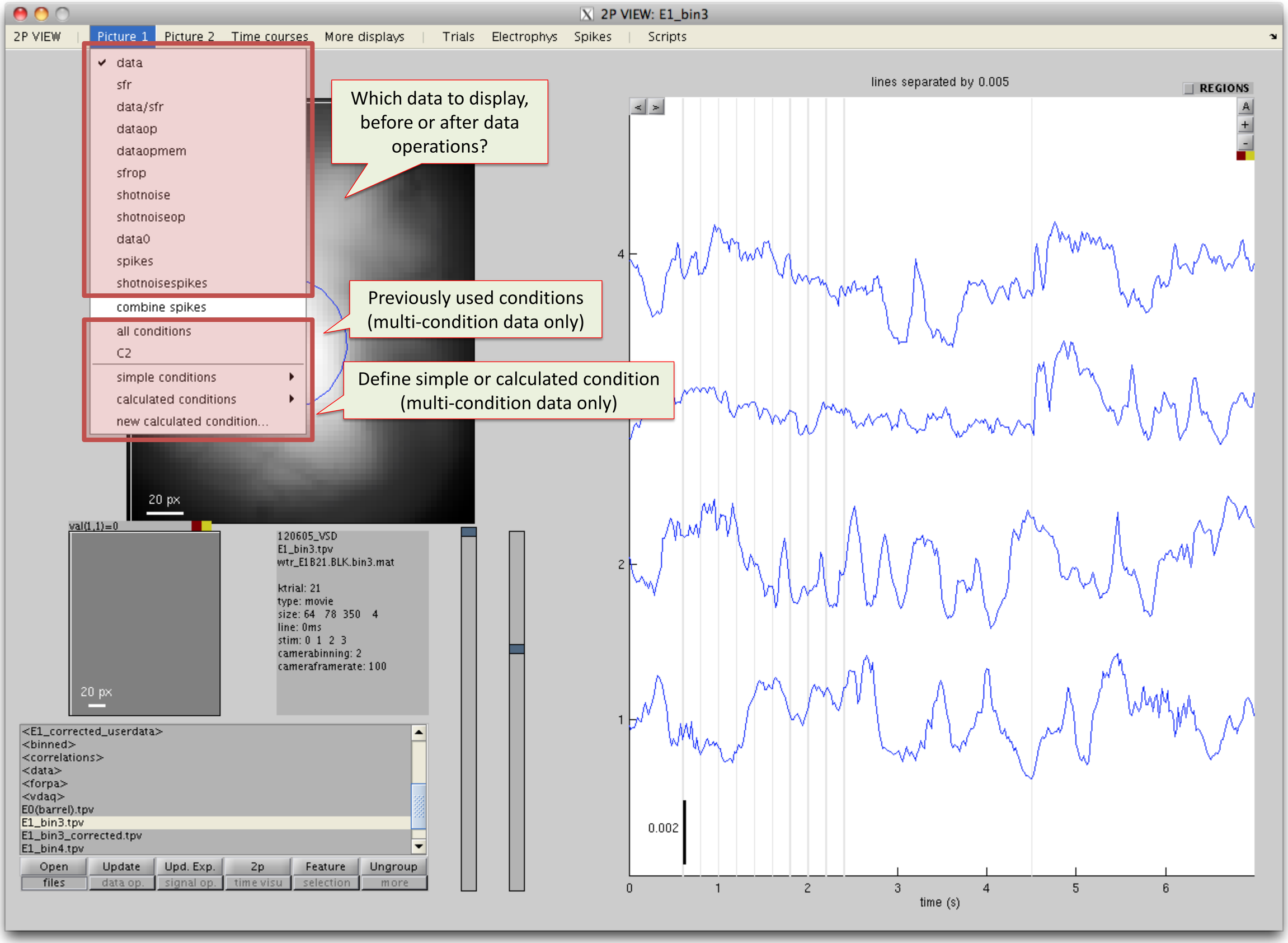
2)a. Which displays are available?

Three default displays: Picture1, Picture2 and Time courses. Each has its own menu.

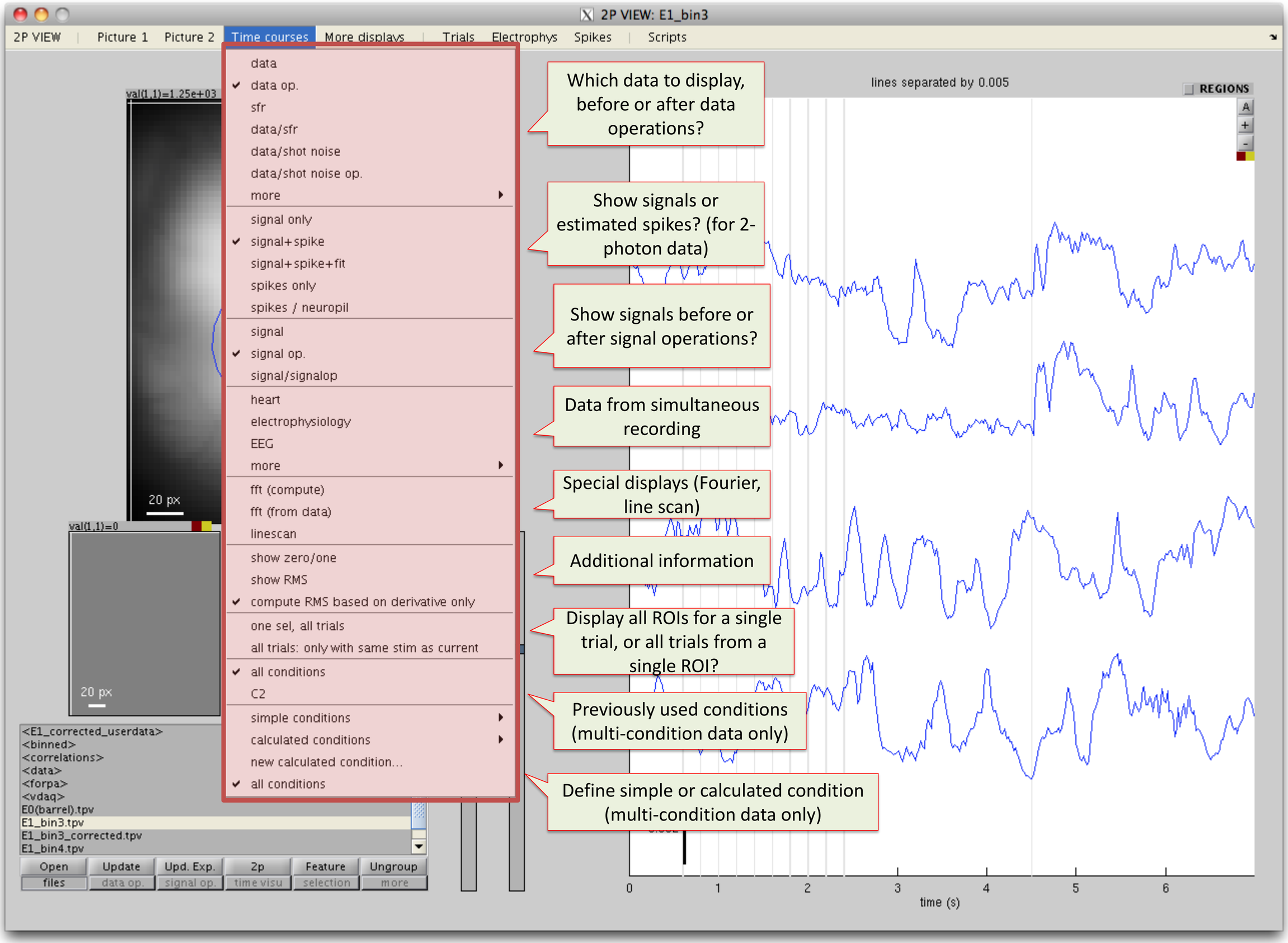
Additional displays are available from the « More displays » menu.



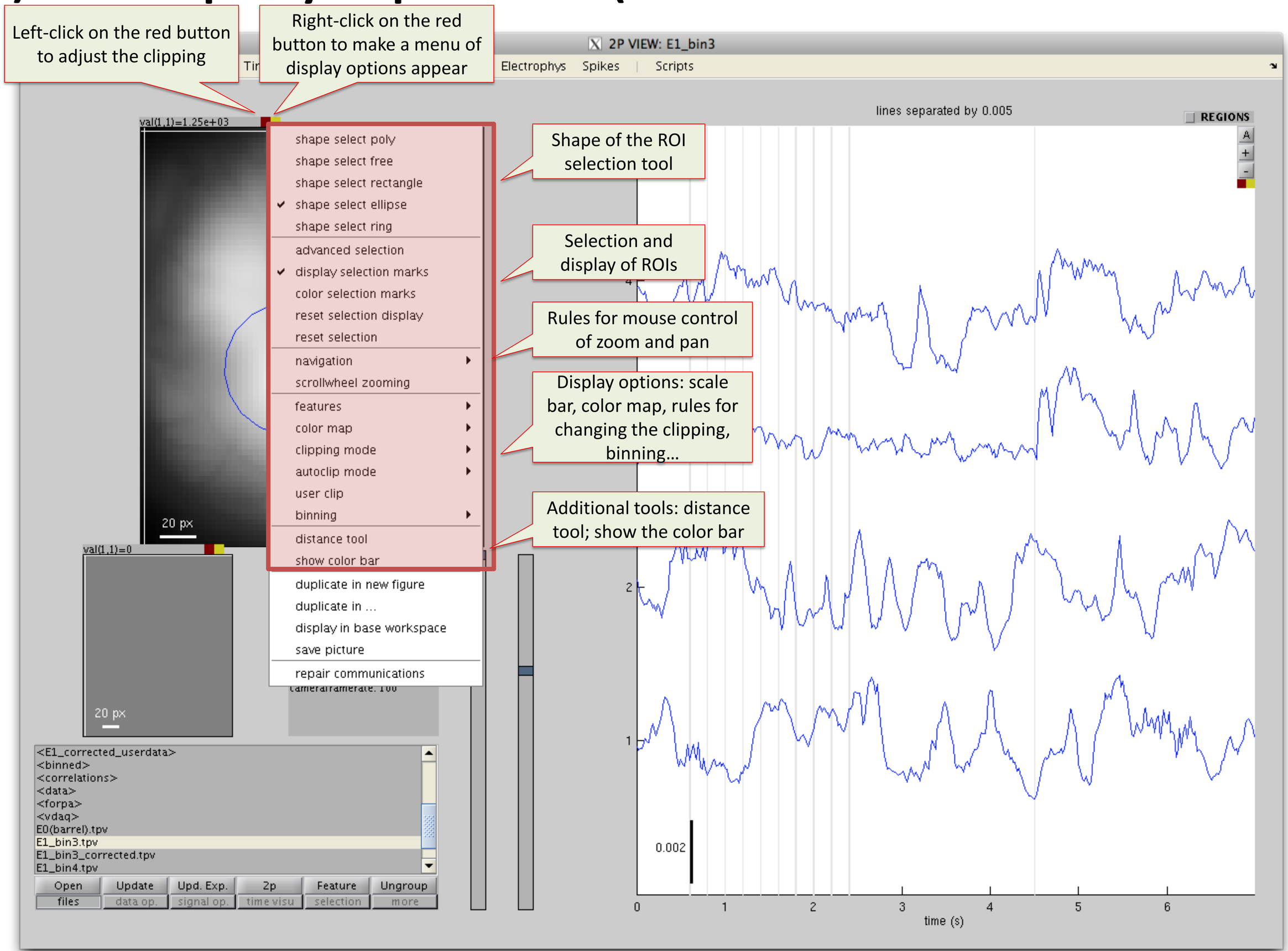
2)b. What to display in Picture1 or Picture2



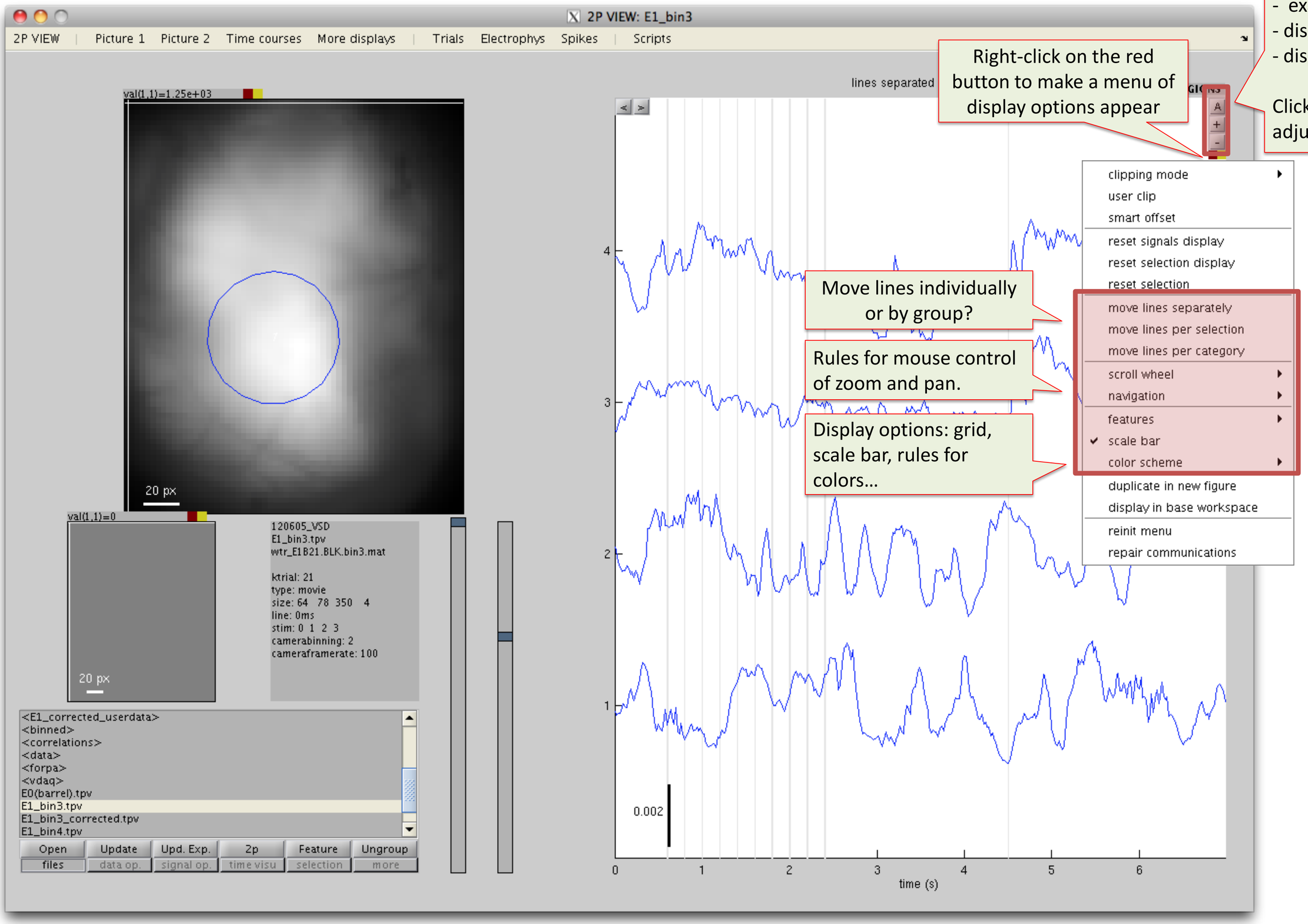
2)b. What to display in Time Courses?



2)c. Display options (Picture1 and Picture2)



2)c. Display options (Time Courses)

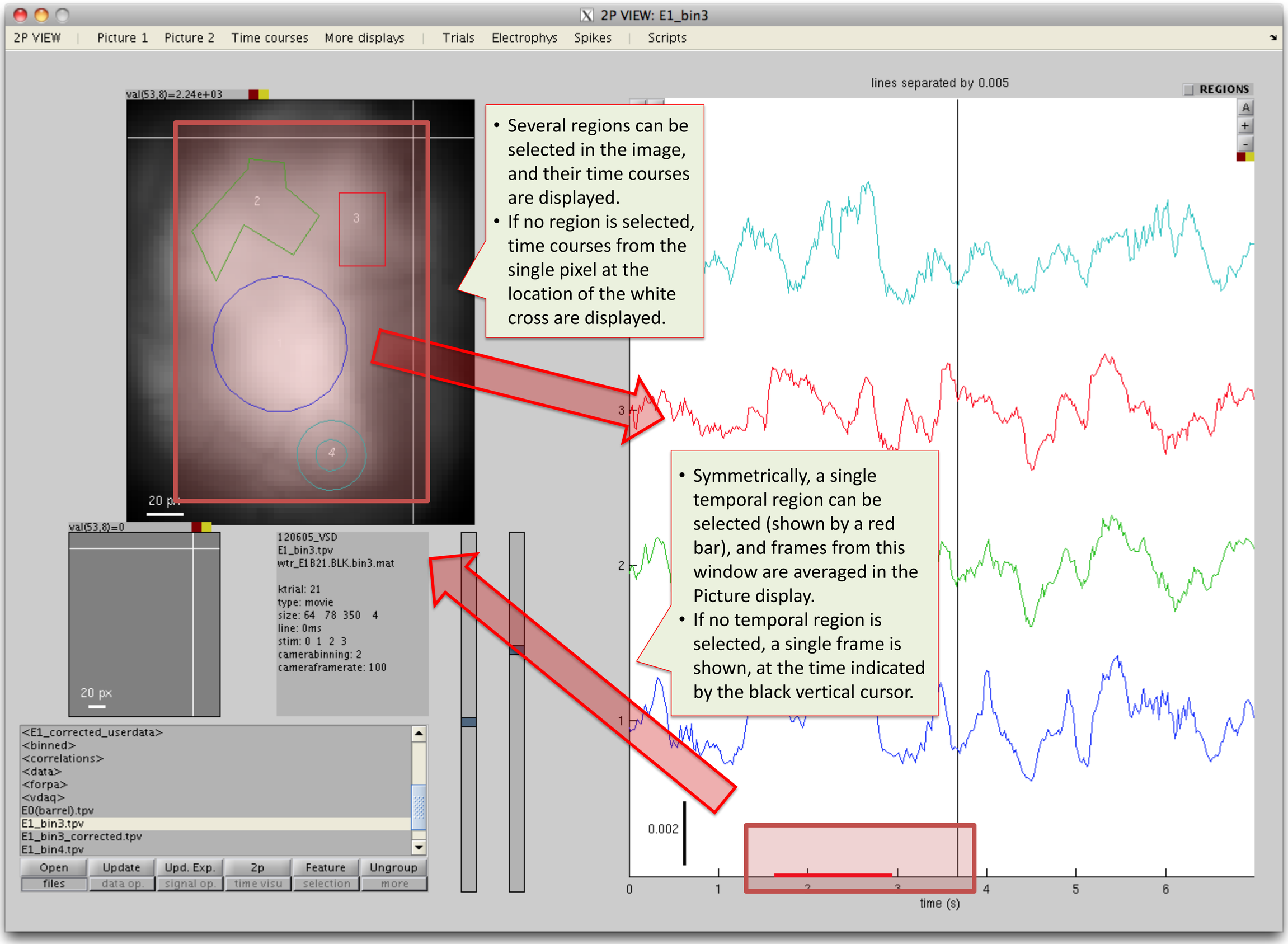


Right-click on the red button to make a menu of display options appear

Click on ‘A’ to switch between 3 automatic display modes:
- exact display
- dispatch regions
- dispatch conditions

Click on ‘+’ or ‘=‘ to adjust the size.

2)d. Principles of region selection



2)d. Mouse actions

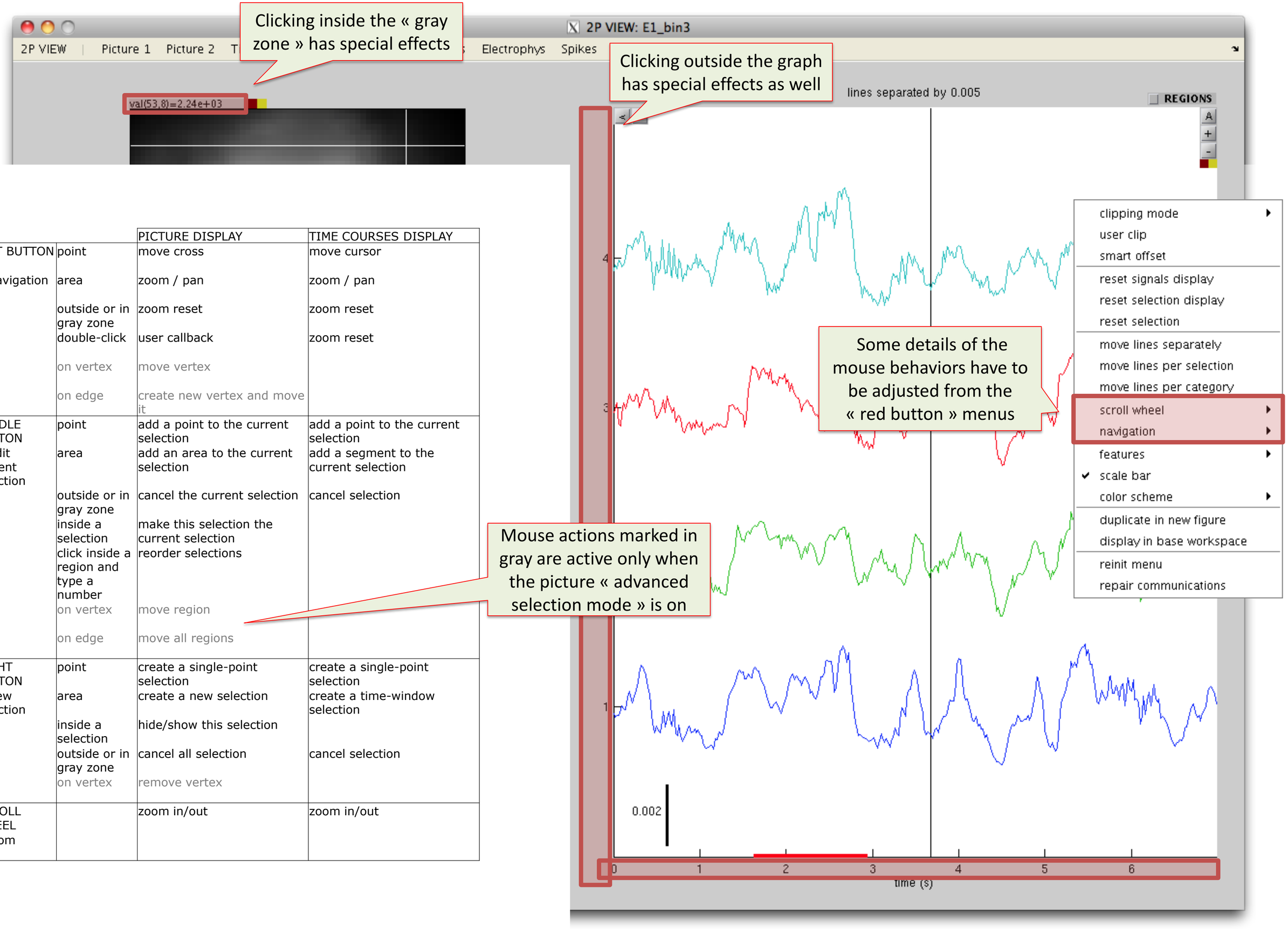
		PICTURE DISPLAY	TIME COURSES DISPLAY
LEFT BUTTON = navigation	point	move cross	move cursor
	area	zoom / pan	zoom / pan
	outside or in gray zone	zoom reset	zoom reset
	double-click	user callback	zoom reset
	on vertex	move vertex	
	on edge	create new vertex and move it	
MIDDLE BUTTON = edit current selection	point	add a point to the current selection	add a point to the current selection
	area	add an area to the current selection	add a segment to the current selection
	outside or in gray zone	cancel the current selection	cancel selection
	inside a selection	make this selection the current selection	
	click inside a region and type a number	reorder selections	
	on vertex	move region	
	on edge	move all regions	
RIGHT BUTTON = new selection	point	create a single-point selection	create a single-point selection
	area	create a new selection	create a time-window selection
	inside a selection	hide/show this selection	
	outside or in gray zone	cancel all selection	cancel selection
	on vertex	remove vertex	
SCROLL WHEEL =zoom		zoom in/out	zoom in/out

Clicking inside the « gray zone » has special effects

Clicking outside the graph has special effects as well

Some details of the mouse behaviors have to be adjusted from the « red button » menus

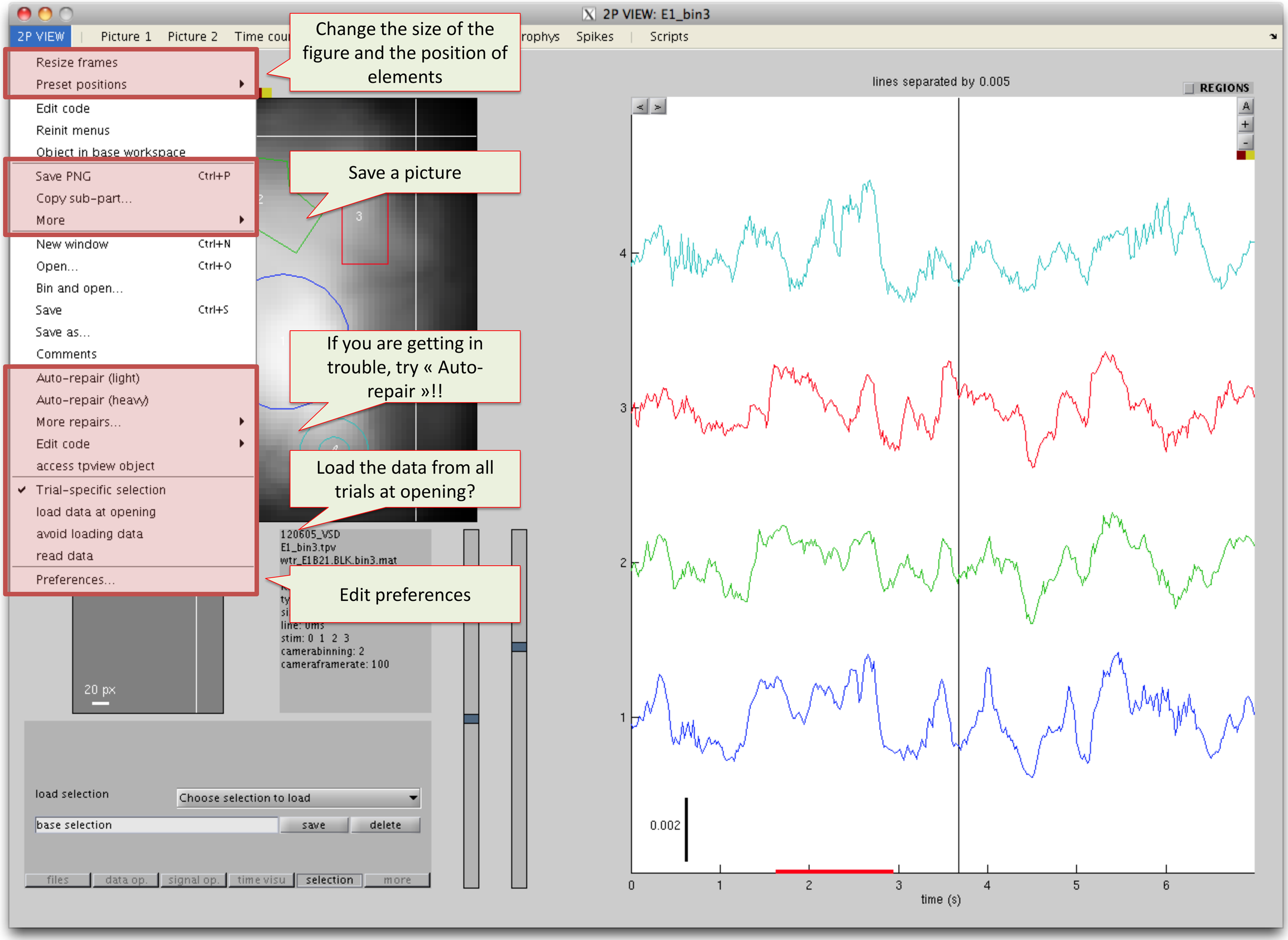
Mouse actions marked in gray are active only when the picture « advanced selection mode » is on



3) Other useful tools

a. The 2Pview menu

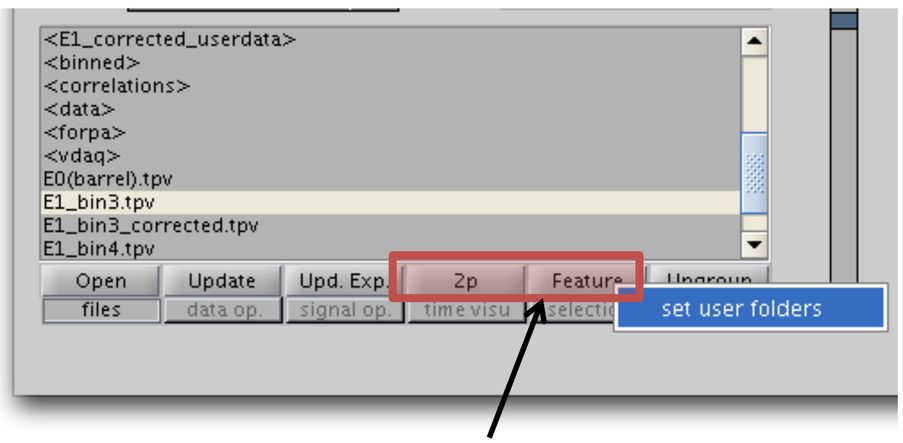
3)a. The « 2Pview » menu



II. In details

1) Manipulation of the data
2) Display of the data
3) Other useful tools

1)a. The « file panel »

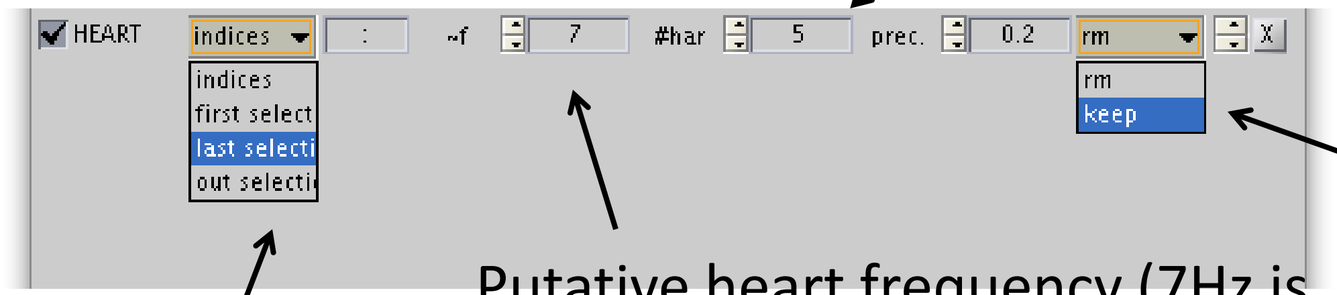


These two buttons provide the ability to create shortcuts to your two preffered data folders. Right-click on any of them to define these folders.

1)c. Heart correction

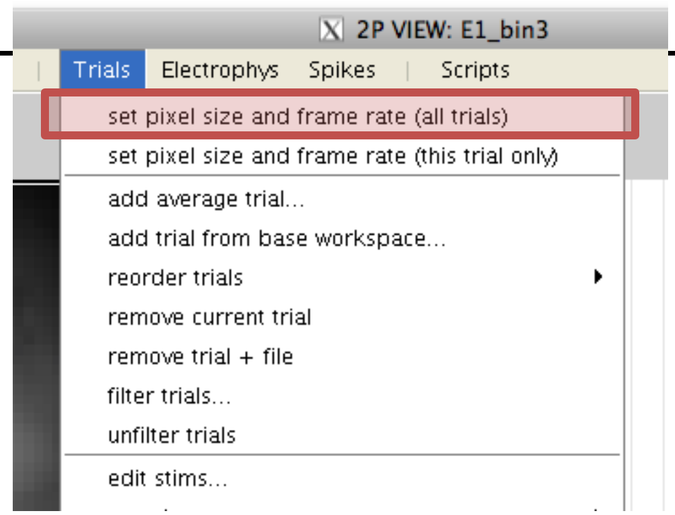
These are the recommended parameters for heart correction on rat.

Number of harmonics to use (1 would result in a sinus estimation, more harmonics capture more high frequencies)



First select a region of interest and choose option ‘last selection’ to tell that heart beat times should be estimated using that region.

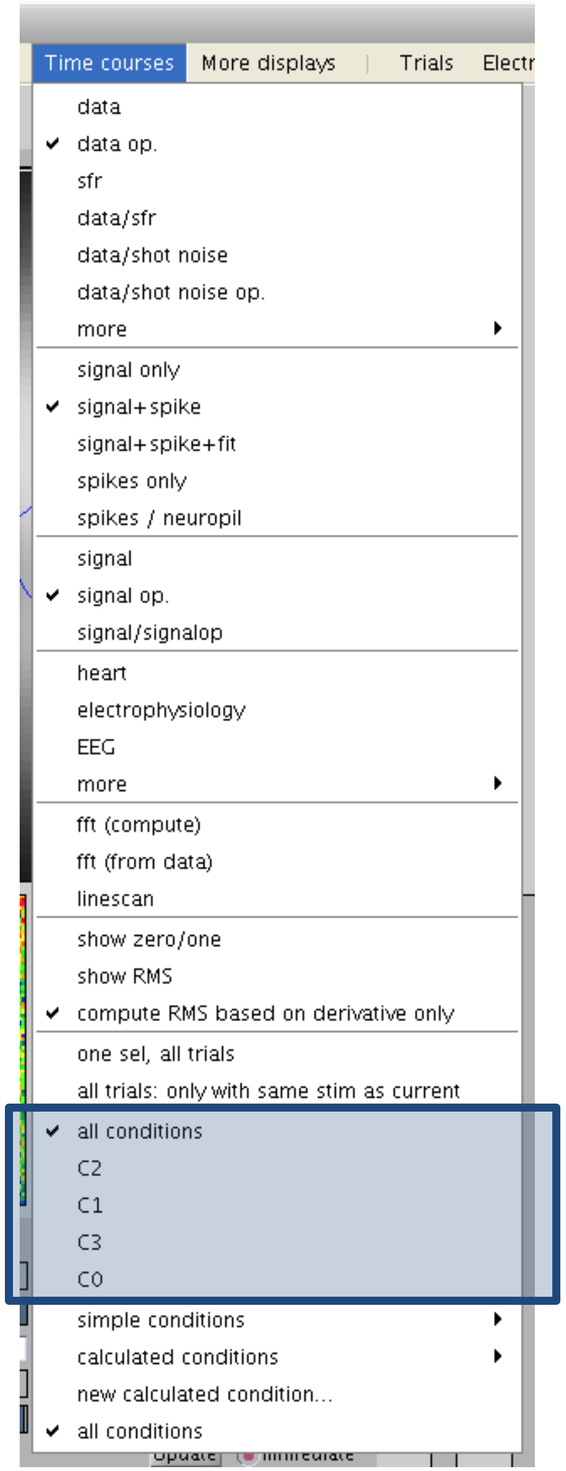
Putative heart frequency (7Hz is fine for rat. Note that it is necessary that the frame duration has been defined accurately before (here:)



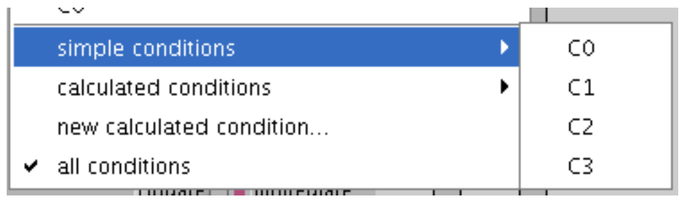
Choose whether to remove the estimated heart or keep only it. It is advised to first select ‘keep’ in order to check that it has been correctly estimated, then select ‘rm’ to perform the correction.

2)b. Which condition(s) to display?

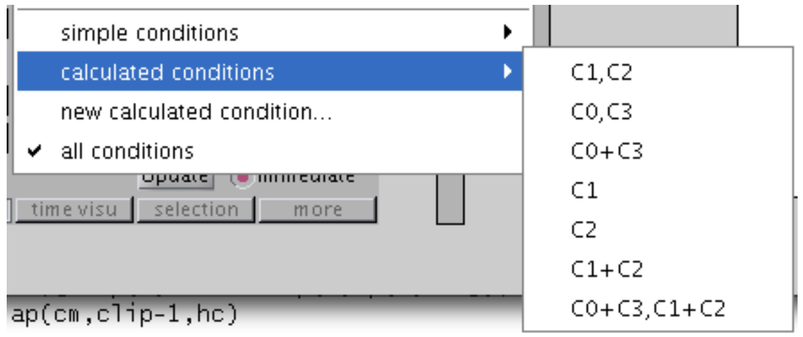
When data has mutiple conditions, it is possible to choose which to display in Picture1, Picture2 or Time Courses. Several options exist:



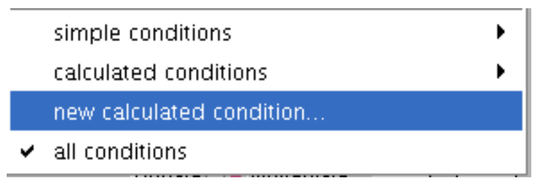
1) Choose one of the recently used conditions



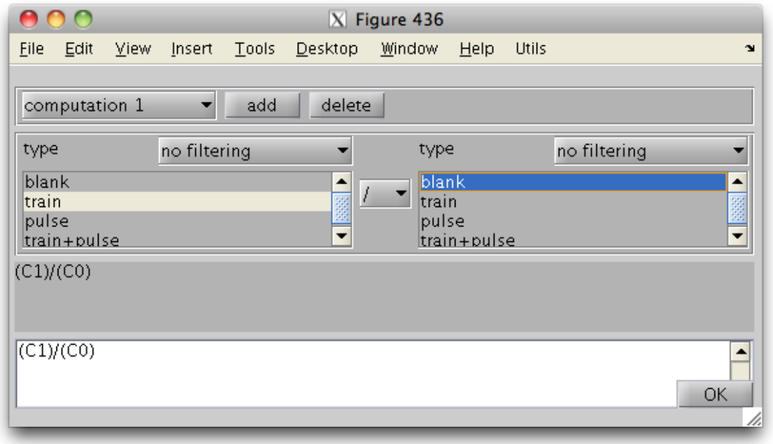
2) Choose a simple conditions

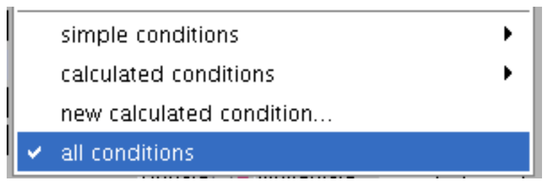


3) Choose a recent calculated condition



4) Create a new calculated condition: a new window opens that lets you define it





5) Display all simple conditions together