User's guide

dPETSTEP 4D viewer GUI

This document shows the usage of the dPETSTEP GUI viewing and annotating 4D images, and explains the different inputs to the GUI.

The GUI can be run by typing in the MATLAB command prompt:

```
>> dPETSTEP_4Dviewer(image)
```

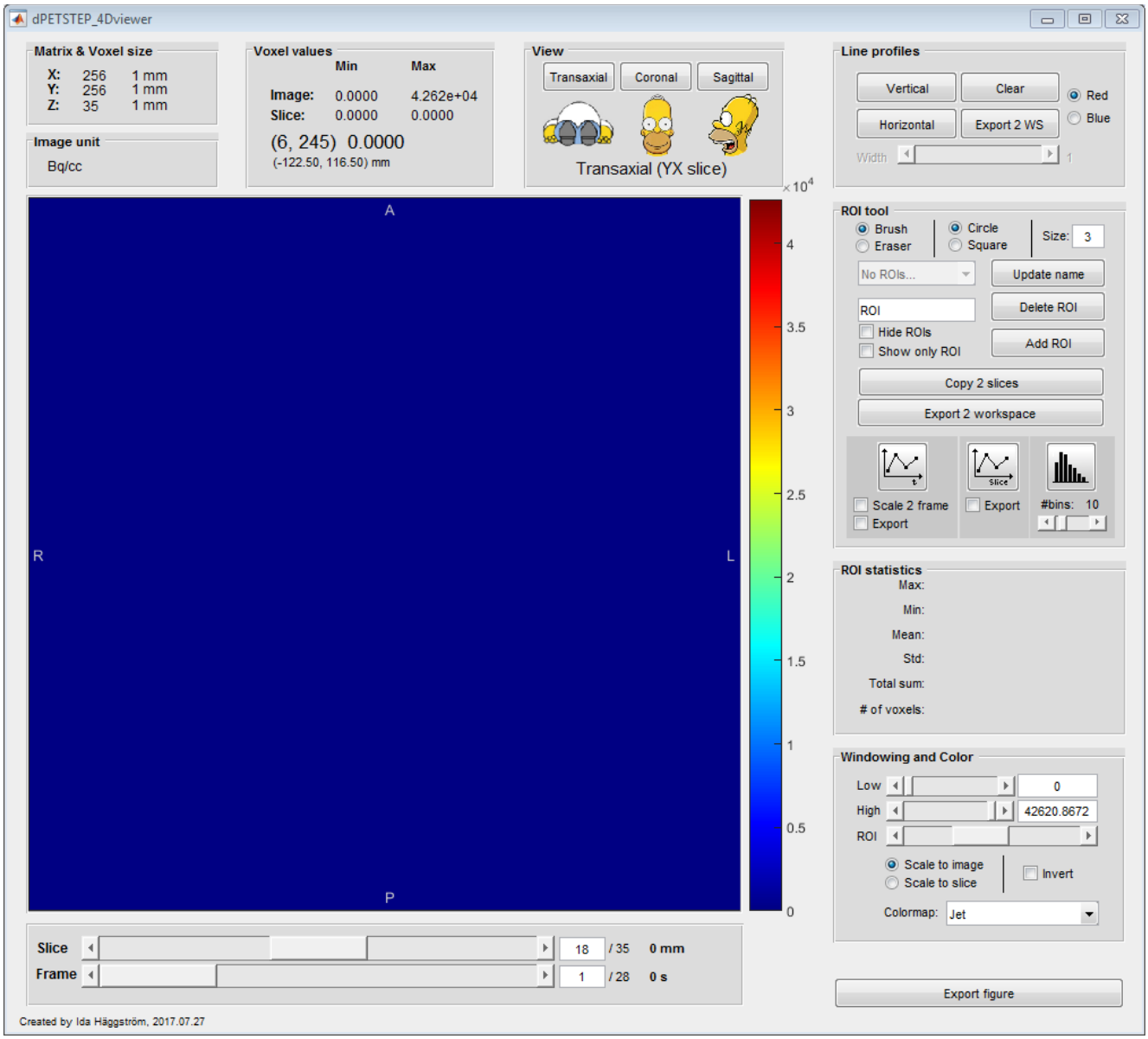
or with optional arguments

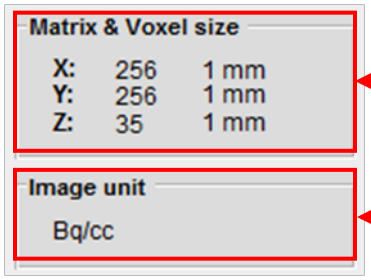
```
>> dPETSTEP_4Dviewer(image,
                     ROI1, 'name of ROI1',
                     ROI2, 'name of ROI2',
                     ...
                     ROIn, 'name of ROIn',
                     'frame', frame,
                     'voxelSize', voxelSize,
                     'dimUnits', dimUnits,
                     'imageUnit', imageUnit,
                     'slicePosition', slicePosition )
```

The inputs to the function are:

MANDATORY:		
	image	2, 3 or 4D image matrix.
OPTIONAL:		
	ROI	2 or 3D ROI mask matrix (no time dimension).
	'name of ROI'	String with name of ROI.
	frame	Frame time vector [f_1, f_2,…,f_{t+1}] for t time points. Default [0,1,…t].
	voxelSize	Vector with size of voxels, [sizeX, sizeY, sizeZ]. Default [1,1,1].
	dimUnits	Cell with distance and time unit. Default {'mm' 's'}.
	imageUnit	String with image unit. Default 'Bq/cc'.
	slicePosition	Vector with slice position [1,#Slices]. Default [–#Slices/2,– #Slices/2+1, … , #Slices/2-1, #Slices/2].

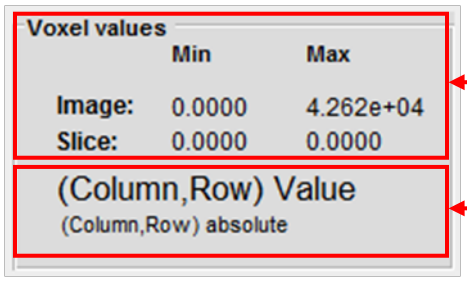
The command opens the full window seen below. All fields have tool tips to guide you.


dPETSTEP_4Dviewer
Matrix & Voxel size
X: 256 1 mm
Y: 256 1 mm
Z: 35 1 mm
Image unit
Bq/cc
Voxel values
Min Max
Image: 0.0000 4.262e+04
Slice: 0.0000 0.0000
(6, 245) 0.0000
(-122.50, 116.50) mm
View
Transaxial
Coronal
Sagittal
Transaxial (YX slice)
Line profiles
Vertical
Clear
Red
Horizontal
Export 2 WS
Blue
Width
ROI tool
Brush
Eraser
Circle
Square
Size: 3
No ROIs...
Update name
ROI
Delete ROI
Hide ROIs
Show only ROI
Add ROI
Copy 2 slices
Export 2 workspace
Scale 2 frame
Export
Export
#bins: 10
ROI statistics
Max:
Min:
Mean:
Std:
Total sum:
# of voxels:
Windowing and Color
Low 0
High 42620.8672
ROI
Scale to image
Scale to slice
Invert
Colormap: Jet
A
P
R
L
×10^4
4
3.5
3
2.5
2
1.5
1
0.5
0
Slice 18 / 35 0 mm
Frame 1 / 28 0 s
Export figure
Created by Ida Häggström, 2017.07.27



Displays matrix size as well as voxel size for each dimension X,Y,Z.

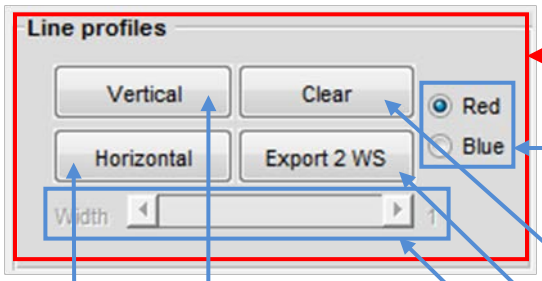
Displays image unit.



Displays image min/max values for entire image as well as current slice.

Displays current column, row and value of voxel which mouse pointer is hovering over. Gives column, row both as unitless values, as well as distance values. Updates upon mouse movement.

Allows user to switch view of the figure window.



Allows user to draw a line profile in the image. Acts on current slice and frame. The drawn line profile can be moved by clicking it, holding and dragging it in the figure window.

Change color of displayed line profile.

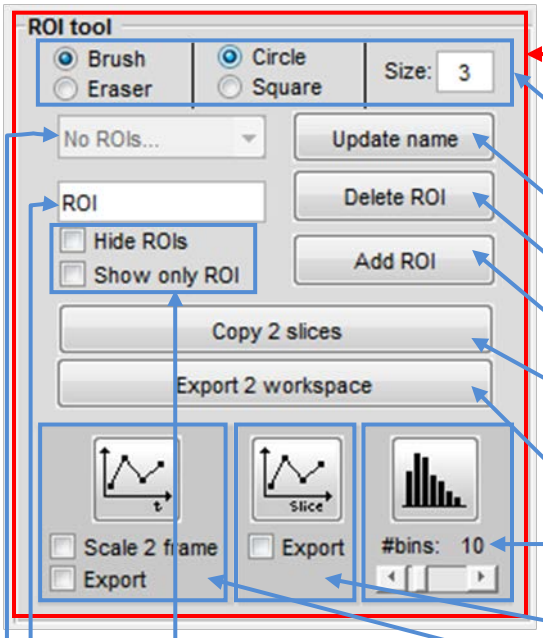
Remove line profile.

Export current line profile as vector to workspace.

Draw vertical line profile.

Change width of line profile.

Draw horizontal line profile.



Allows user to draw ROIs and analyze some of their properties.

Draw or erase to ROI mask by choosing type of brush (circle or square) and its size.

Update name of current ROI.

Delete current ROI.

Add new ROI.

Copy ROI in current slice to all slices. Overwrites existing drawings of current ROI in other slices.

Export all ROIs to workspace.

Get histogram plot of ROI. Choose number of histogram bins.

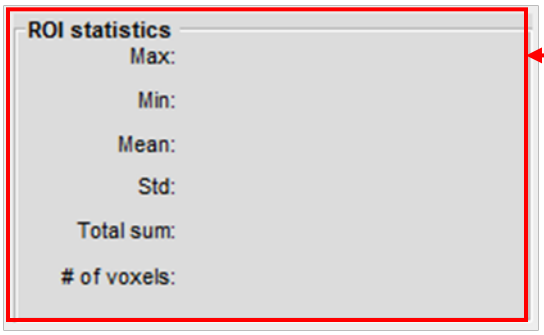
Plot slice profile of ROI average value. Check box to export to workspace.

Plot time activity curve of ROI average value. Check scale box to divide curve points by frame duration. Check box to export to workspace.

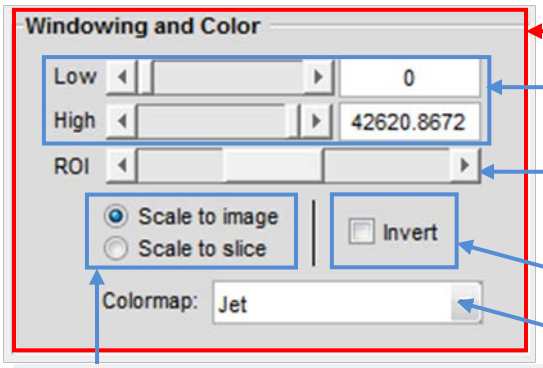
Check to hide ROI from figure window, and to hide image (show only ROI).

Name of current ROI. Can be edited.

Choose current (selected) ROI from list.



Displays the main statistics of the currently selected ROI.



Allows user to window the figure and choose color scale.

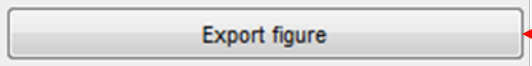
Set low and high window value, either by slider or by typing value in the boxes

Set transparency amount of ROI. Lower value = more transparent (only contour visible).

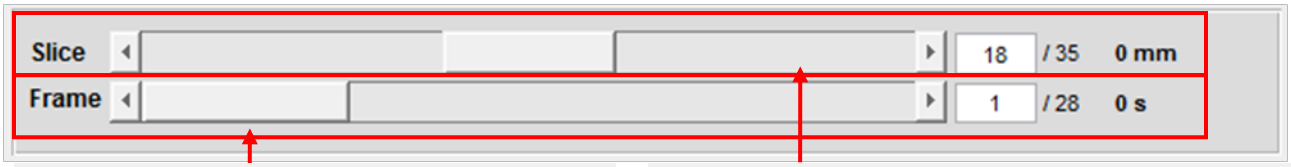
Invert colormap.

Choose colormap.

Scale figure to span [min max] of entire image, or current slice.



Export current figure to file. Includes drawn ROIs.



Chose frame to display by slider, or by typing frame number in box.

Chose slice to display by slider, or by typing slice number in box.