

POLITECNICO DI TORINO

ELABORAZIONE DI IMMAGINI MEDICHE

BDS1

2018/19

Graphical User Interface - Quick Guide

Image Registration of DWI-T2w Images of the Prostate Gland

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I Loading a volume

After initializing the program, the first step is loading the volume, both T2w and DWI. One must select the “Open file” icon or click on “File>Open”.

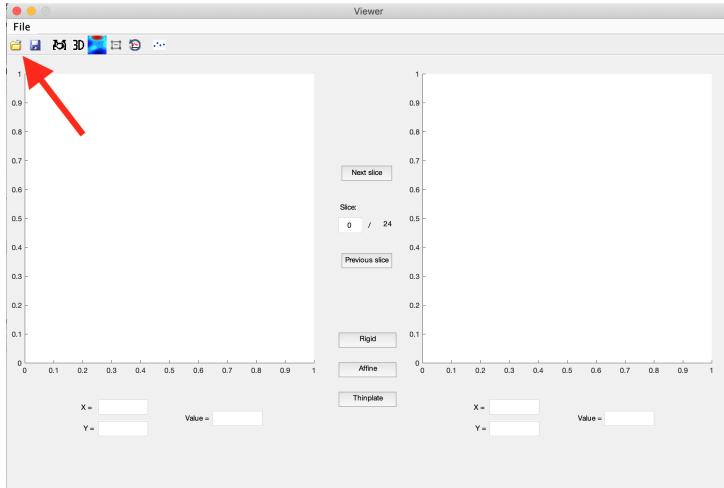


Figura 1: How to load a volume.

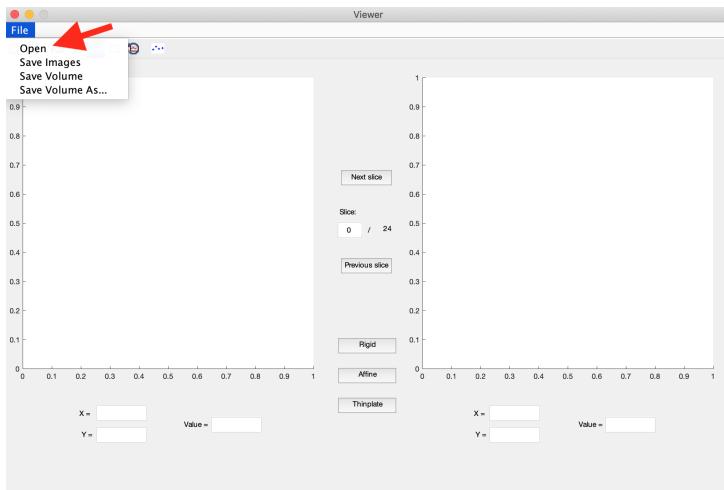


Figura 2: How to load a volume.

After that, the user can select the volume in various ways: select a .mat file containing a 3 dimensions matrix, corresponding to the volume; select a .mat file containing a Volume object or select two separate images.

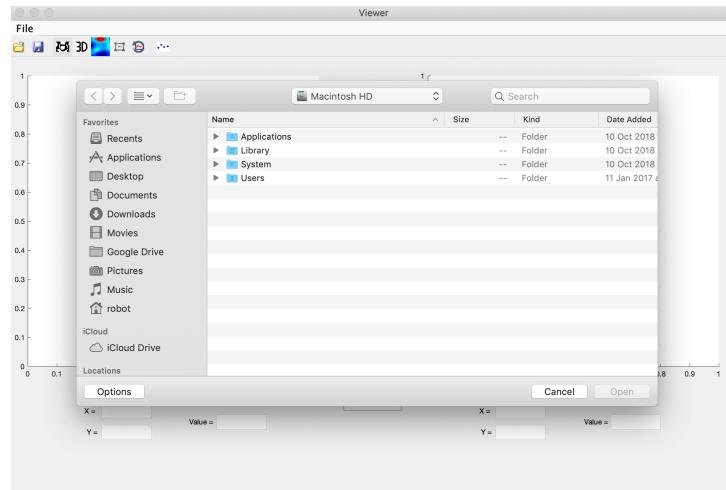


Figura 3: Files selection.

II GUI with volumes imported

The user can move the cursor to any point of each image and see its value and the corresponding value in the other image.

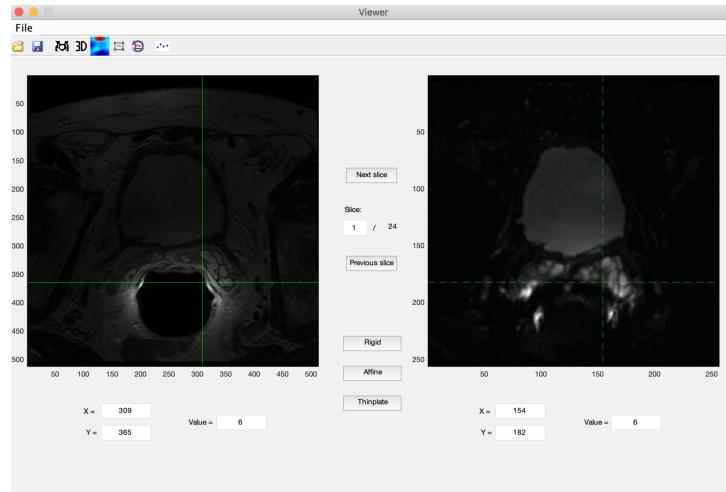


Figura 4: Interface with images loaded.

The user can change between slices with the up arrow and down arrow keys or by pressing the buttons.

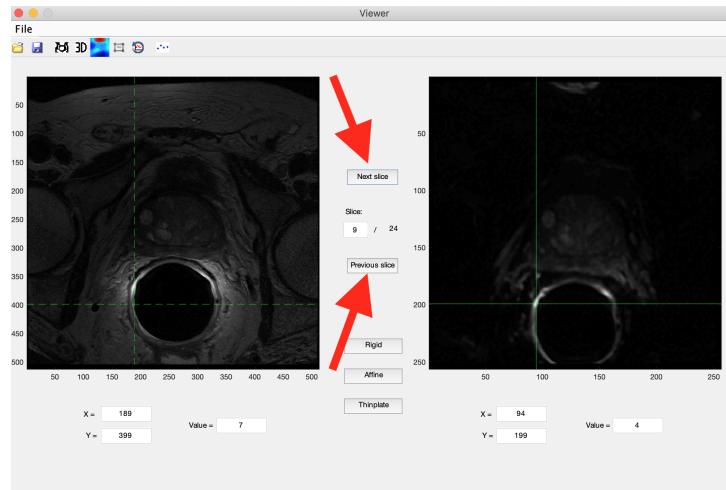


Figura 5: Change slices.

III Image editing

The user can also change the images brightness and/or contrast by dragging on the image.

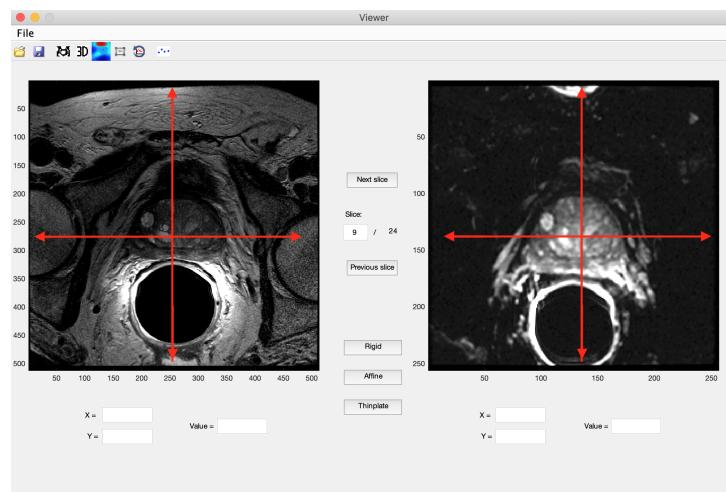


Figura 6: Brightness/contrast adjustment.

If the user desires, he can also reset the brightness/contrast values.

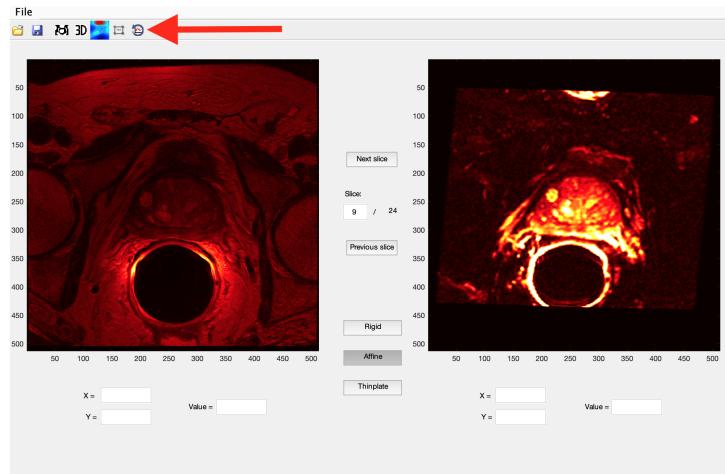


Figura 7: Reset brightness/contrast.

IV Points selection

To select points in each image, the user must change to “Points Selection” mode.

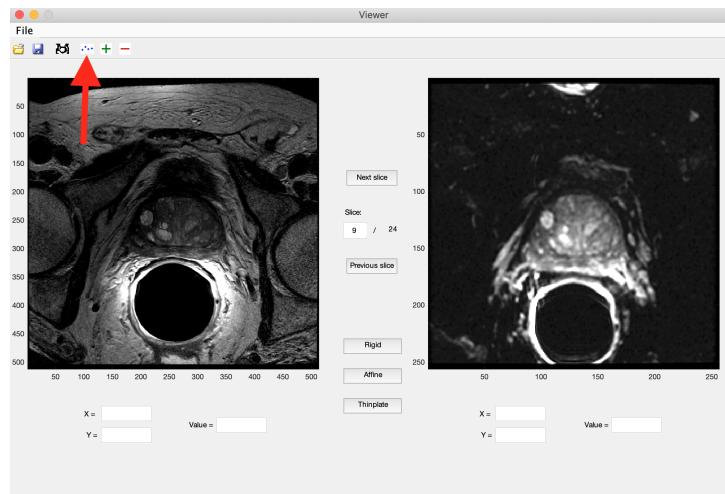


Figura 8: Points selection mode.

To enter “Points adding” mode, the user must press the “+” button. When finish, the user must press any key, e.g. the “spacebar” key, to confirm the points selection. If the user wants to remove a pair of points, he must click on the “-” button.

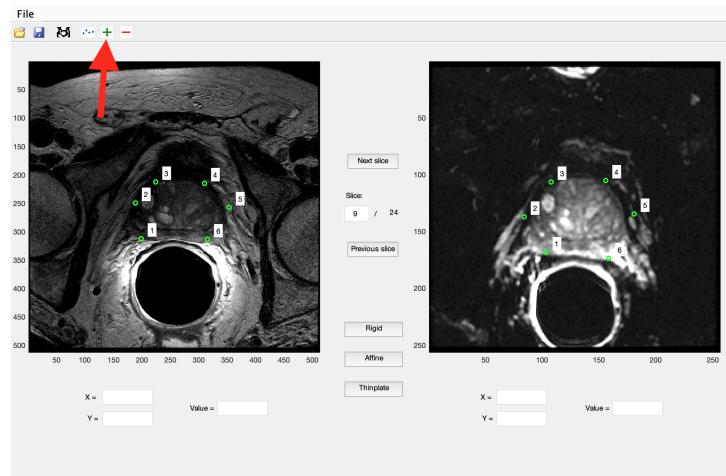


Figura 9: How to enter Adding points mode.

V Images after registration

Going back to the “View mode”, the user can then select one of the three transformations and see the result of it.

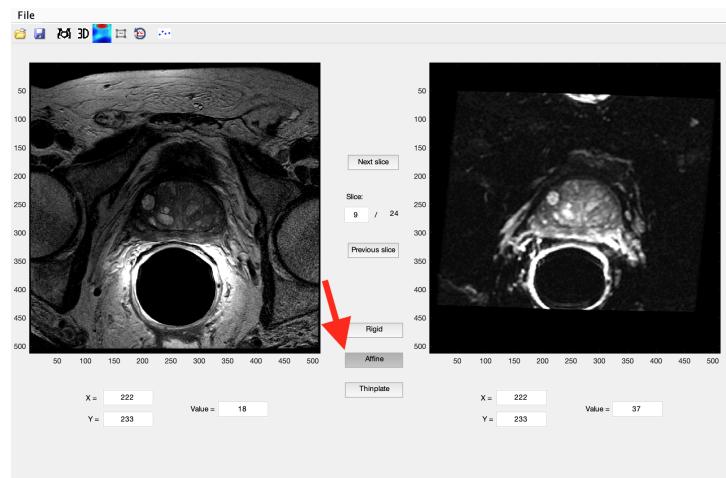


Figura 10: How to load a volume.

VI 3D mode

The user can press the “3D” button to visualize a pseudo 3D mode.

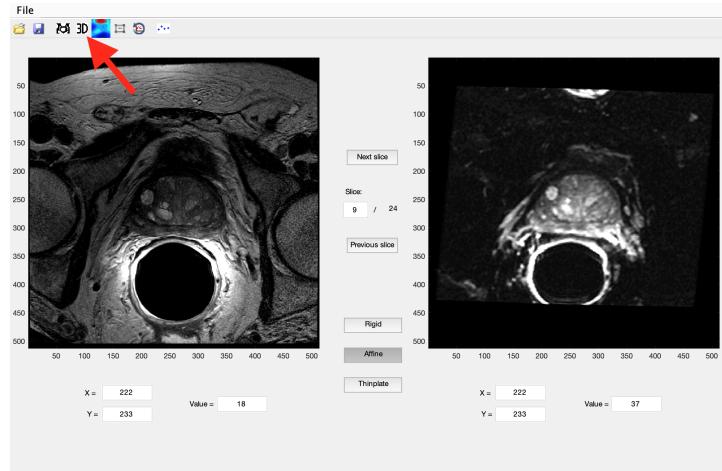


Figura 11: How to enter 3D mode.

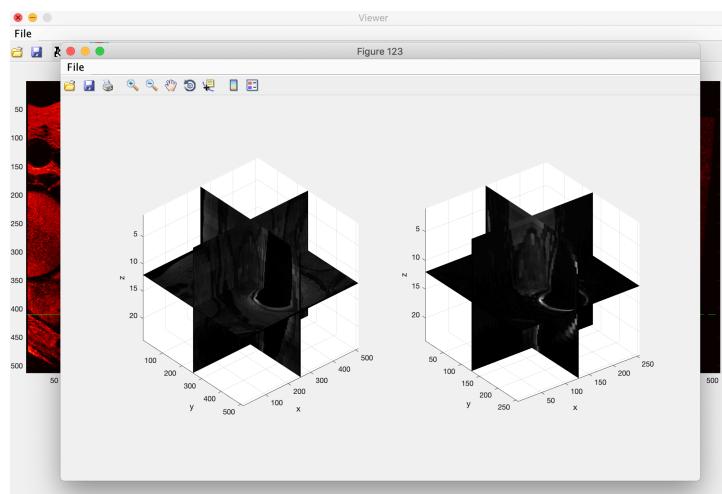


Figura 12: 3D mode.

VII Change colormap

The user can also change the color map by pressing the “color map” button.



Figura 13: Change color map.

VIII Check evaluation's results

The user can check the Evaluation's results by pressing the indicated button.

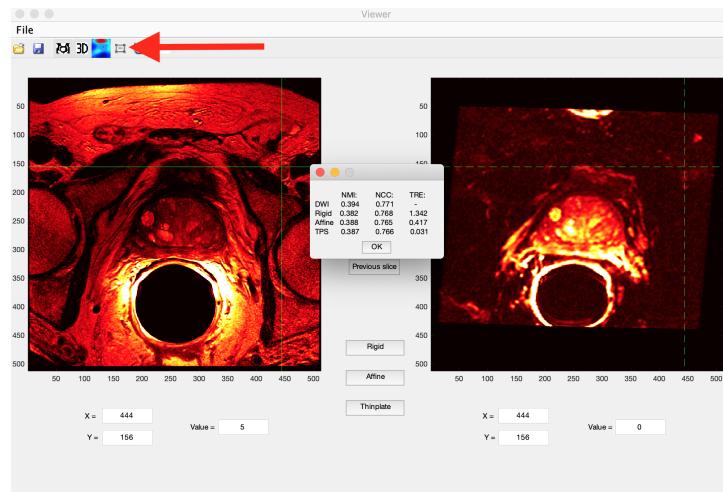


Figura 14: How to check evaluation's results.

IX Save images

When done, the user can save 5 images correspondent to the T2w, DWI, Rigid, Affine and TPS images.

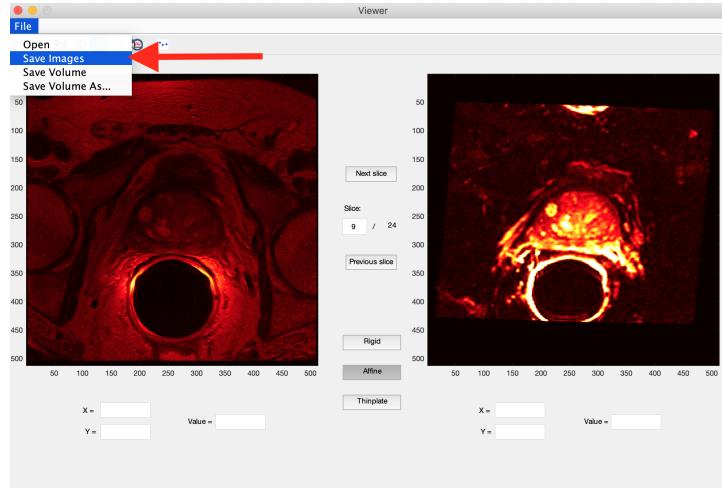


Figura 15: How to save the images.

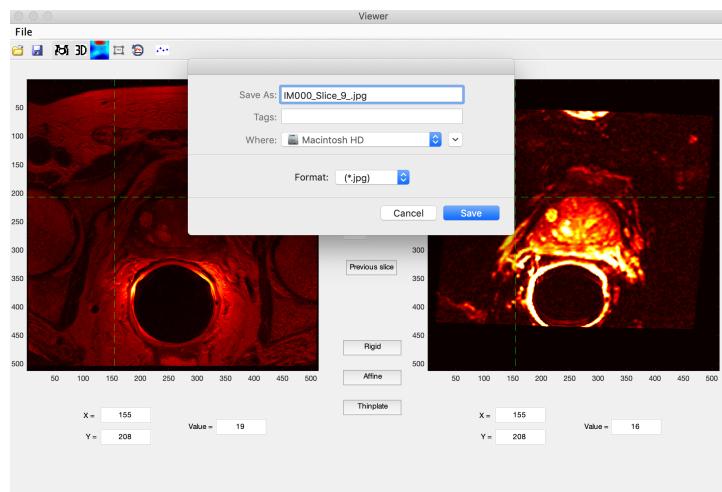


Figura 16: Saving menu.