

A VERY SHORT INTRODUCTION TO AMIRA

1. Adjust pictures to **same dimension** in batch

2. Calculate **voxel size**

open Excel sheet "Amira Z-voxel calculation"

ACDSee < Modify < Edit Mode < Crop

crop scale bar to see number of pixels

3. Open **Amira**

open data < select all pictures < open

Image Read Parameters:

channel conversion < luminance

change object name

fill out calculated voxel size in the third box

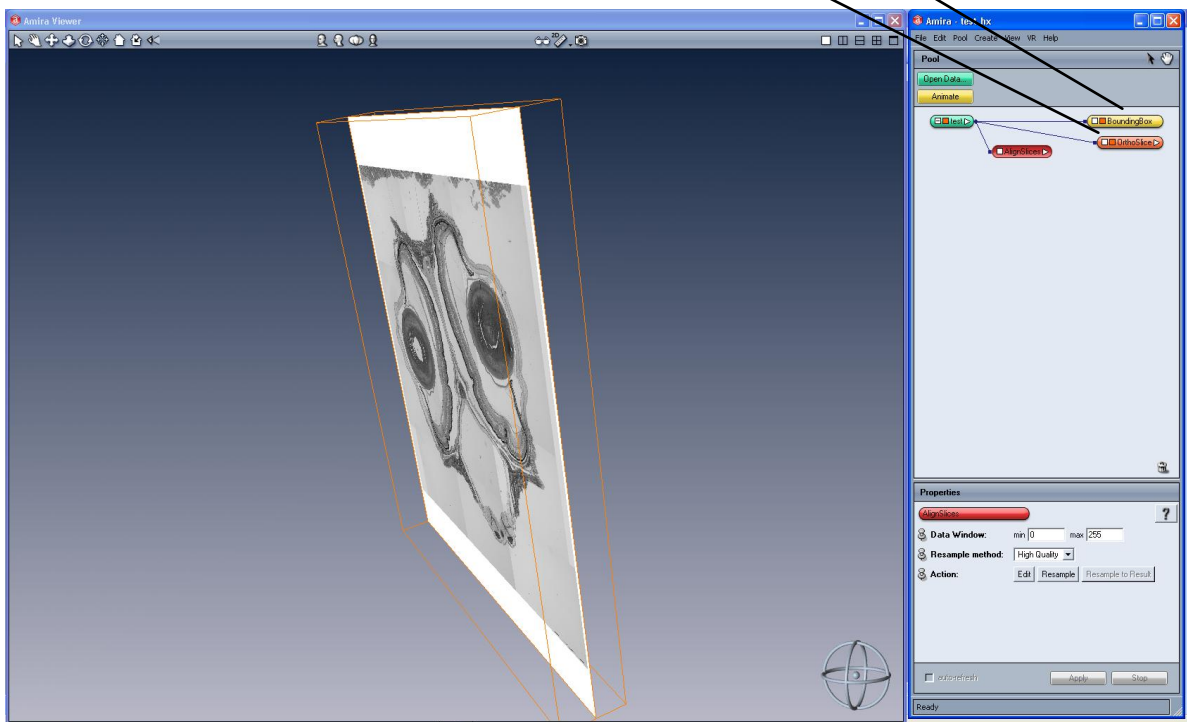
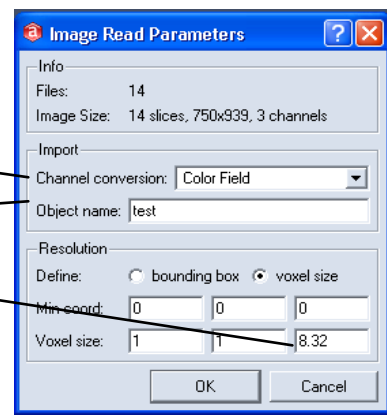
result

→

*.tif

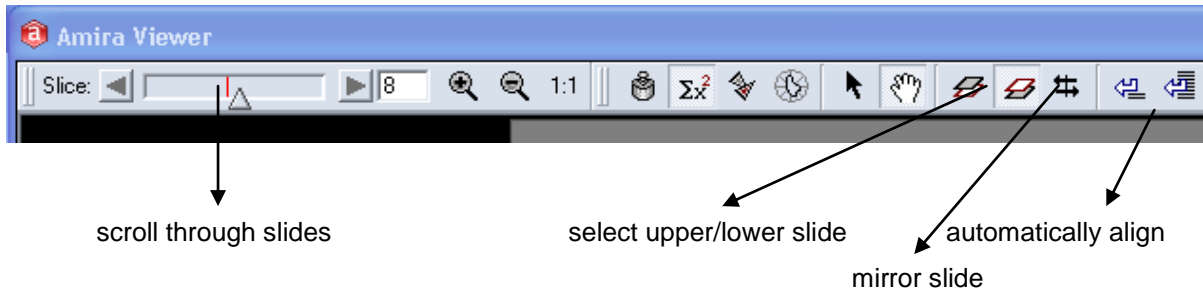
right click < boundingbox (shows box)

< orthoslice (shows slices)



4. Align

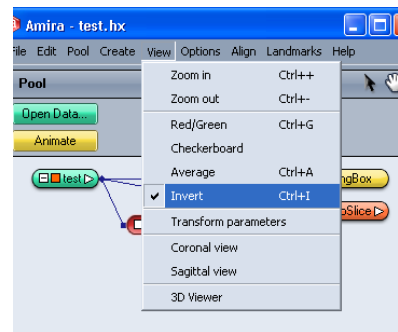
right click on *.tif < compute < align slices < edit



view < red/green; checkerboard; average; invert

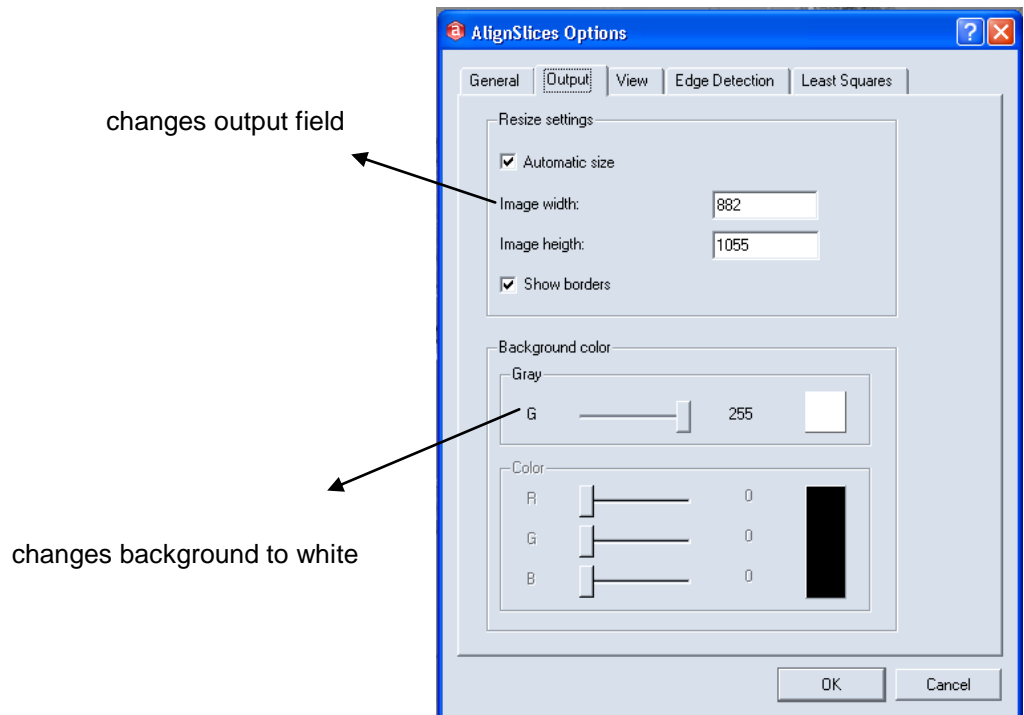
manually aligning:

- left mouse: move slice
- left mouse + Ctrl: rotate slice
- left mouse + Shift: move all slices
- left mouse + Ctrl + Shift: rotate all slices



align < options < output

resize settings < automatic size & show borders (adjusts working field)



< resample & close (if asked, save changes)

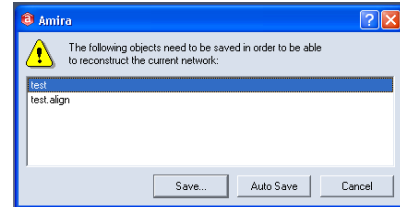
result → *.align

5. Save network

file < save network as...

insert name

'the following objects need to be saved in order to...' < auto save (this creates a folder in source folder: *-files)



6. Label

right click on *.to-byte < labelling < labelfield

result



*.labels

pool: return to network

to make new material

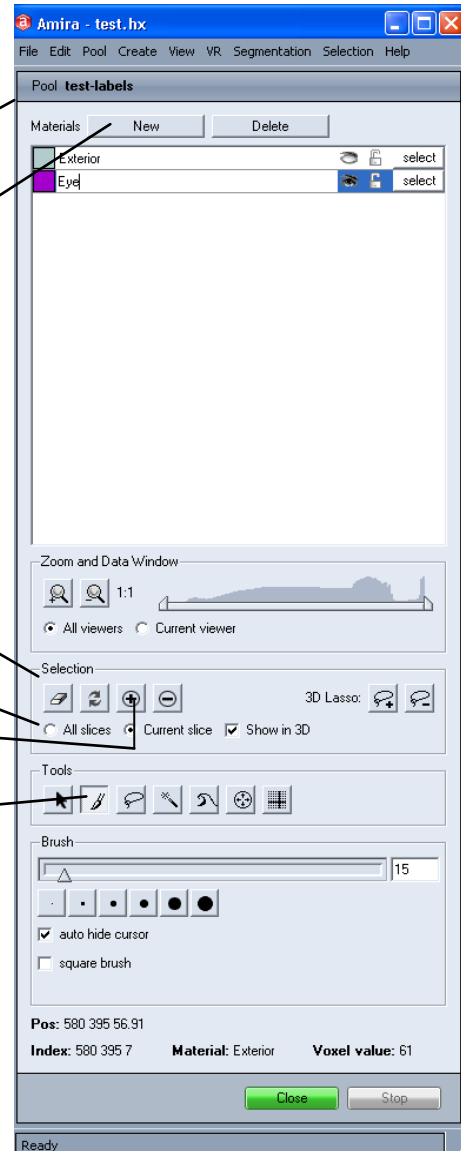
right click to rename, edit colour

to clear selection

switch between current and all slices

to add or subtract selection

use brush to draw selection



shortcuts:

+ or -: add or subtract selection

F: fill selection

C: clear selection

U: undo

Z and Shift Z: zoom out & in

D: change draw style of selection

Shift D: change draw style of selection under pointer

Ctrl + drawing: eraser

Ctrl I: interpolate selection between slices

Ctrl R: replaces structure by selection

7. Surfacegen

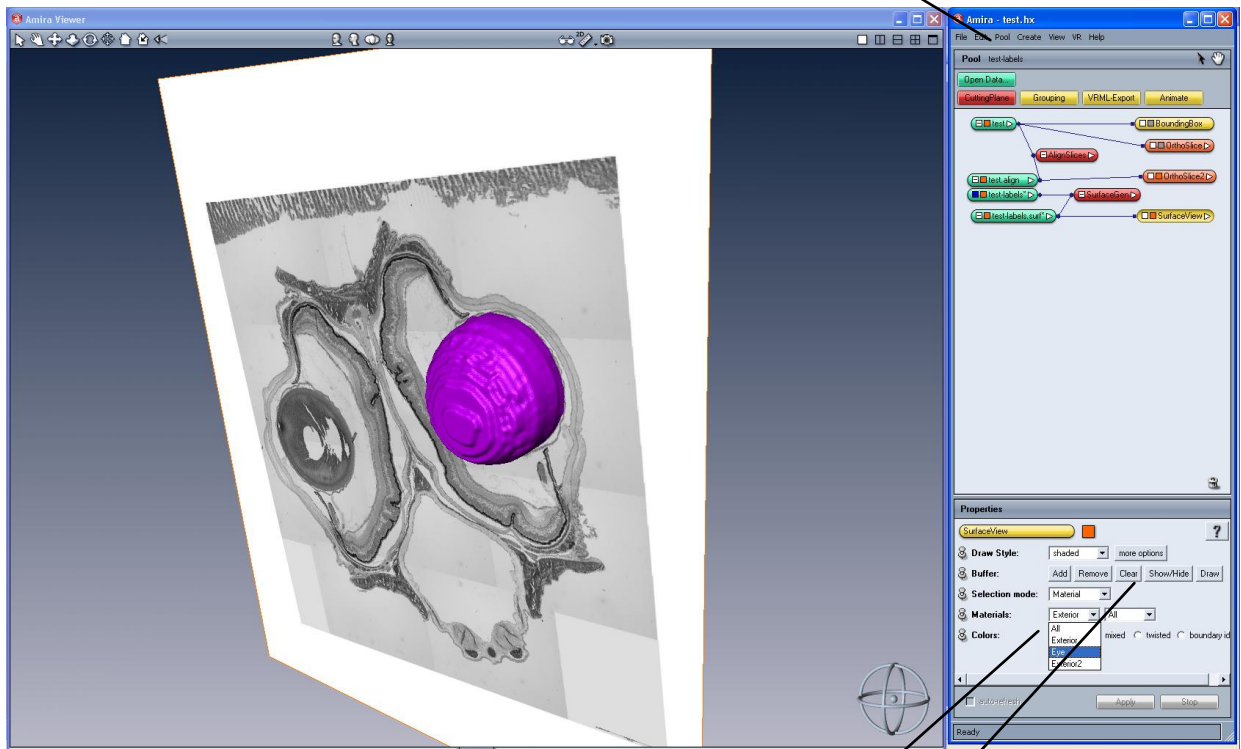
first save network

right click on *.labels < surfacegen < apply ('input data contains...' < continue)

result → *.surf

right click on *.surf < surfaceview

*-labels: return to labelfield



surfaceview < materials (list of all labelled structures)
< add; remove; clear; show/hide; draw (to visualize structures separately)

continue to label all structures in the same network

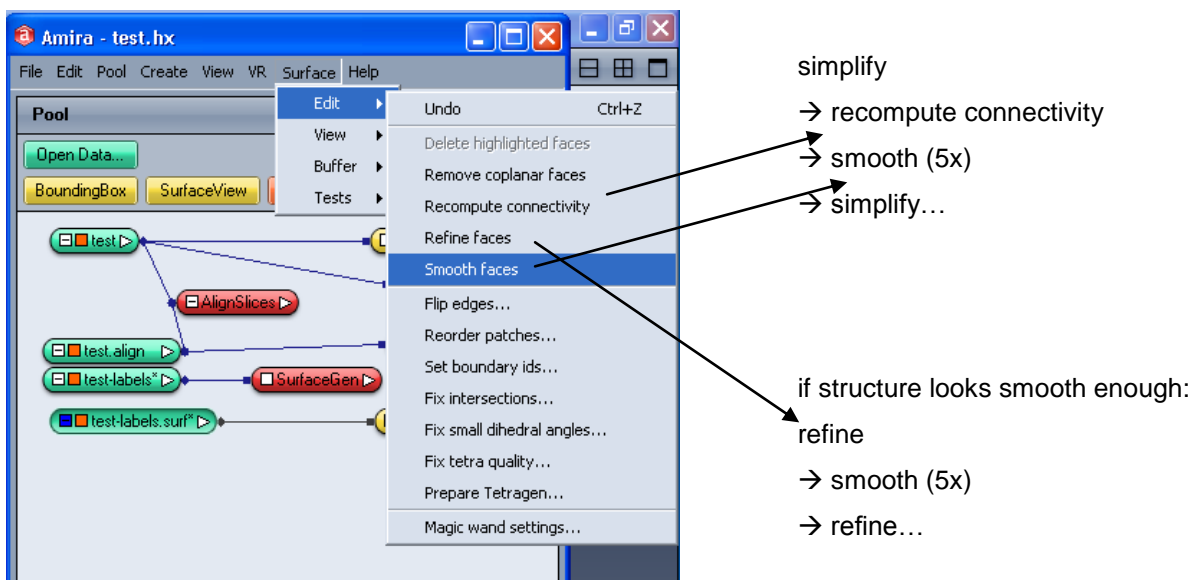
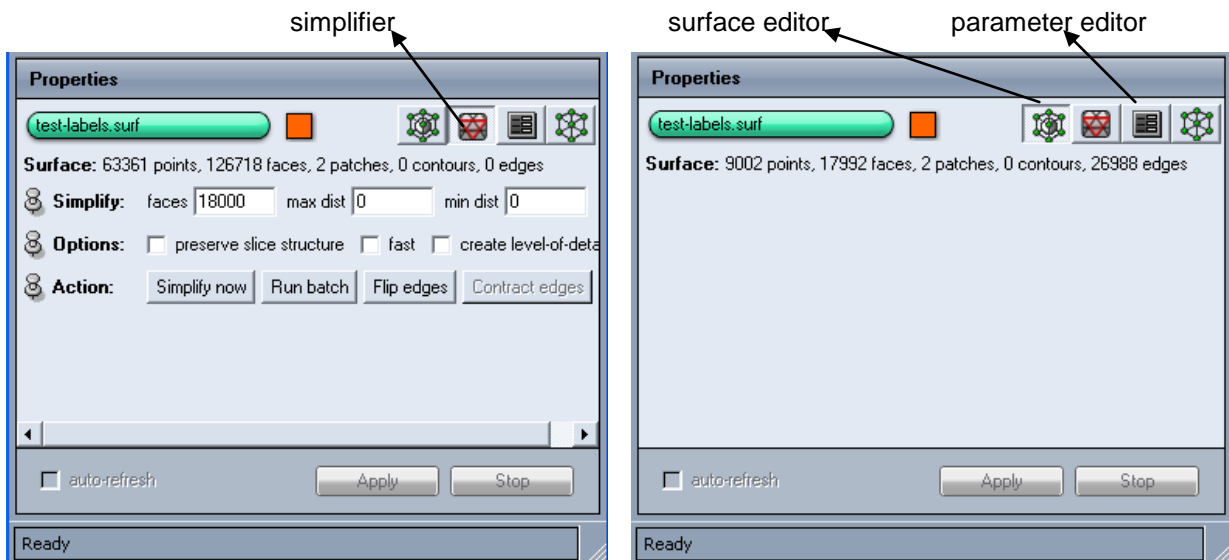
8. Smooth

select *.surf < simplifier < simplify now

< surface editor < surface < edit < recompute connectivity

< smooth (several times)

repeat until 4500 or 1125 faces or just before start losing important details



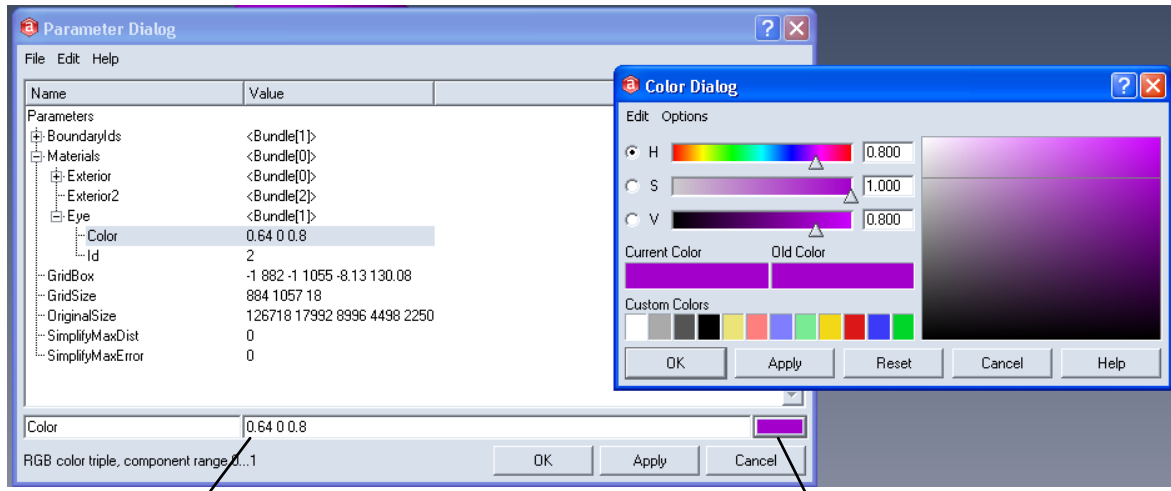
select *.surf < surface editor < edit < refine faces
 < smooth (several times)
 repeat until 72000 faces or less in smaller structures

9. Save surf file

select *.surf
 file < save data as... < insert name of structure

10. Edit colour and transparency

select *.surf < parameter editor < materials < name of structure < color < insert
 values or click on sample to edit colour

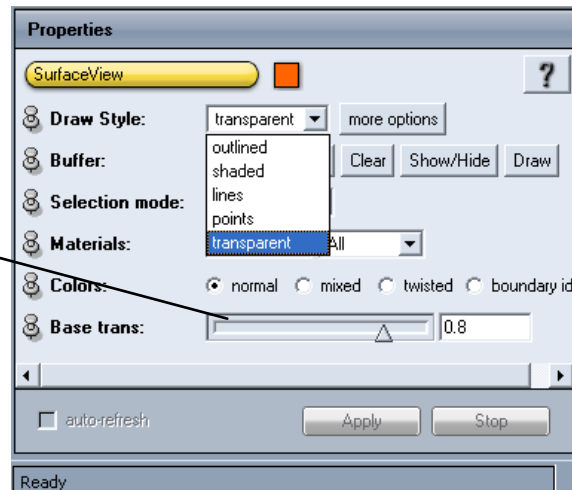


insert value here

or click here and the color dialog shows up

select surfaceview < draw style < transparent

adjust base trans to right level



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