

# INFOS

## Addressed topics

Mask Approaches

Scenario: Input is already a skullstripped t2.nii

Image registration failed due to a huge lesion or a heavy deformed brain

## Mask Approaches

One of the approaches has to be chosen for image registration

Parameter: **x.wa.elxMaskApproach** has to be set to 0,1,2,3 or 4

### Approach-0

- bases on a combination of c1/c2/c3 compartments for mouse and template as input for registration
- maskLesion: yes

### Approach-1

- bases on combination of c1/c2/c3 compartments for mouse and template as input for registration
- uses a brainmask from c1+c2 with threshold=0.1
- maskLesion: yes

### Approach-2

- use mouse' c1 compartment only, set values below 0.6 to zero and register to a template's combination of c1/c2/c3 template
- maskLesion: yes
- inf input t2.nii is already skullstripped this seems to be the best approach using Par0025affine & Par0033bspline\_EM2.txt ,

### Approach-3

- recalc. skullstripping based on mt2.nii
- register skullstripped mt2.nii to AVGT.nii
- maskLesion: no

### Approach-4

- recalc. skullstripping based on mt2.nii
- register skullstripped, intensity-scaled (range 0-1000) mt2.nii to AVGT.nii
- maskLesion: no
- can be used for large deformations or heavy lesions

### Approach-5

- register skullstripped t2.nii to AVGT.nii
- maskLesion: no

## OTHERS

- initial rigid body transform: use 'trafoeuler3.txt' for large dislocations (translation shifts) instead of 'trafoeuler2'
- use bias field correction (set [BiasFieldCor] to 1) to run initial BSF if segmentation/registration fails

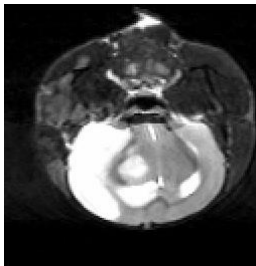
## Scenario: Input is already a skullstripped t2.nii

Configfile settings:

- [usePriorskullstrip]: [0]
- [elxMaskApproach]: set to one of the approaches (0,1,2,3,4), but approach-2 seems to yield the best results
- [elxParamfile]: - contain the paths to the affine and bspline parameter files

- Par0025affine.txt + Par0033bspline\_EM2.txt seems to work
- but try also par\_affine038CD1.txt + par\_bspline033CD1.txt  
or par\_ap4\_affine.txt + par\_ap4\_bspline.txt

## Image registration failed due to a huge lesion or a heavy deformed brain



**Problem: Registration does not work:**

Solution: Change parameters in the project file:

Steps:

- Edit configfile '**proj.m**' ,if proj.m is the project parameter file of the respective study
- set: [**elxMaskApproach**] to 4
- replace parameter files of [**elxParamfile**] with '**par\_ap4\_affine.txt**' + '**par\_ap4\_bspline.txt**'
  - preserve order of parameter files (first affine, than bspline)
  - example: x.wa.elxParamfile = { 'o:\antx\mrtools\elastix\paramfiles\par\_ap4\_affine.txt' 'o:\antx\mrtools\elastix\paramfiles\par\_ap4\_bspline.txt' };
- type **antcb('reload')** or use **loadproj**-button to reload the project file
- select the specific mis-registered mouse from left listbox
- if steps [1]- [4] have been done before select step [4] "**xwarp-Elastix**" (otherwise select step [1]- [4]) and hit **[Run FUN, fun first]**