
INPUTS:

Distorted b0 path: /INPUTS/b0.nii.gz

T1 path: /INPUTS/T1.nii.gz

T1 atlas path: /extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c.nii.gz

T1 2.5 iso atlas path: /extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c_2_5.nii.gz

Results path: /OUTPUTS

Job directory path: /tmp/tmp.QPCZtAaJKU

Making results directory...

Normalizing T1

normalize_T1.sh /INPUTS/T1.nii.gz /tmp/tmp.QPCZtAaJKU/T1_N3.nii.gz

/tmp/tmp.QPCZtAaJKU/T1_norm.nii.gz

INPUTS:

T1 path: /INPUTS/T1.nii.gz

T1 N3 path: /tmp/tmp.QPCZtAaJKU/T1_N3.nii.gz

T1 normalized path: /tmp/tmp.QPCZtAaJKU/T1_norm.nii.gz

Job directory path: /tmp/tmp.m3EMdkBowq

mri_convert /tmp/tmp.m3EMdkBowq/T1.nii.gz /tmp/tmp.m3EMdkBowq/T1.mgz

mri_convert.bin /tmp/tmp.m3EMdkBowq/T1.nii.gz /tmp/tmp.m3EMdkBowq/T1.mgz

\$Id: mri_convert.c,v 1.226 2016/02/26 16:15:24 mreuter Exp \$

reading from /tmp/tmp.m3EMdkBowq/T1.nii.gz...

TR=0.00, TE=0.00, TI=0.00, flip angle=0.00

i_ras = (1, -0, 0)

j_ras = (-0, 1, 0)

k_ras = (-0, -0, 1)

writing to /tmp/tmp.m3EMdkBowq/T1.mgz...

mri_nu_correct.mni --i /tmp/tmp.m3EMdkBowq/T1.mgz --o /tmp/tmp.m3EMdkBowq/T1_N3.mgz --n 2

/

/extra/freesurfer/bin/mri_nu_correct.mni

--i /tmp/tmp.m3EMdkBowq/T1.mgz --o /tmp/tmp.m3EMdkBowq/T1_N3.mgz --n 2

nlts 2

\$Id: mri_nu_correct.mni,v 1.27 2016/02/26 16:19:49 mreuter Exp \$

Linux 043c4d4943ed 5.10.47-linuxkit #1 SMP Sat Jul 3 21:51:47 UTC 2021 x86_64 x86_64 x86_64

GNU/Linux

Tue Apr 1 16:11:20 UTC 2025

Program nu_correct, built from:

Package MNI N3, version 1.12.0, compiled by nicks@terrier (x86_64-unknown-linux-gnu) on 2015-06-19
at 01:25:34

/usr/bin/bc

tmpdir is /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20

/

Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Number of iterations: 32
CV of field change: 0.000995928

Iteration 2 Tue Apr 1 16:11:42 UTC 2025
nu_correct -clobber /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu1.mnc
/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc -tmpdir
/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/1/
[@043c4d4943ed:/] [2025-04-01 16:11:42] running:
/extra/freesurfer/mni/bin/nu_estimate_np_and_em -parzen -log -sharpen 0.15 0.01 -iterations 50 -stop
0.001 -shrink 4 -auto_mask -nonotify -b_spline 1.0e-7 -distance 200 -quiet -execute -clobber -nokeeptmp
-tmpdir /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/1/
/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu1.mnc
/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.imp

Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Processing:.....Done
Number of iterations: 16
CV of field change: 0.000978861

mri_binarize --i /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc --min -1 --o
/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/ones.mgz

\$Id: mri_binarize.c,v 1.43 2016/06/09 20:46:21 greve Exp \$

cwd /

cmdline mri_binarize.bin --i /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc --min -1 --o /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/ones.mgz

sysname Linux

hostname 043c4d4943ed

machine x86_64

user UNKNOWN

input /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc

frame 0

nErode3d 0

nErode2d 0

output /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/ones.mgz

Binarizing based on threshold

min -1

max +infinity

binval 1

binvalnot 0

fstart = 0, fend = 0, nframes = 1

Found 12582912 values in range

Counting number of voxels in first frame

Found 12582912 voxels in final mask

Count: 12582912 11999988.000000 12582912 100.000000

mri_binarize done

mri_segstats --id 1 --seg /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/ones.mgz --i

/tmp/tmp.m3EMdkBowq/T1.mgz --sum /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/sum.junk --

avgwf /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/input.mean.dat

\$Id: mri_segstats.c,v 1.121 2016/05/31 17:27:11 greve Exp \$

cwd

cmdline mri_segstats --id 1 --seg /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/ones.mgz --i

/tmp/tmp.m3EMdkBowq/T1.mgz --sum /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/sum.junk --

avgwf /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/input.mean.dat

sysname Linux

hostname 043c4d4943ed

machine x86_64

user UNKNOWN

UseRobust 0

Loading /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/ones.mgz

Loading /tmp/tmp.m3EMdkBowq/T1.mgz

Voxel Volume is 0.953673 mm³

Generating list of segmentation ids

Found 1 segmentations

Computing statistics for each segmentation

Reporting on 1 segmentations

Using PrintSegStat

Computing spatial average of each frame

0

Writing to /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/input.mean.dat

mri_segstats done

mri_segstats --id 1 --seg /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/ones.mgz --i

/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc --sum

/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/sum.junk --avgwf

/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/output.mean.dat

\$Id: mri_segstats.c,v 1.121 2016/05/31 17:27:11 greve Exp \$

cwd

cmdline mri_segstats --id 1 --seg /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/ones.mgz --i

/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc --sum

/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/sum.junk --avgwf

/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/output.mean.dat

sysname Linux

hostname 043c4d4943ed

machine x86_64

user UNKNOWN

UseRobust 0

Loading /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/ones.mgz

Loading /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc

Voxel Volume is 0.953673 mm³

Generating list of segmentation ids

Found 1 segmentations

Computing statistics for each segmentation

Reporting on 1 segmentations

Using PrintSegStat

Computing spatial average of each frame

0

Writing to /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/output.mean.dat

mri_segstats done

mris_calc -o /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc

/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc mul 1.00226096765614686749

Saving result to '/tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc' (type = MINC)

[ok]

mri_convert /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc

/tmp/tmp.m3EMdkBowq/T1_N3.mgz --like /tmp/tmp.m3EMdkBowq/T1.mgz --conform

mri_convert.bin /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc

/tmp/tmp.m3EMdkBowq/T1_N3.mgz --like /tmp/tmp.m3EMdkBowq/T1.mgz --conform

\$Id: mri_convert.c,v 1.226 2016/02/26 16:15:24 mreuter Exp \$

reading from /tmp/tmp.m3EMdkBowq/tmp.mri_nu_correct.mni.20/nu2.mnc...

TR=0.00, TE=0.00, TI=0.00, flip angle=0.00

i_ras = (1, 0, 0)

j_ras = (0, 1, 0)

k_ras = (0, 0, 1)

INFO: transform src into the like-volume: /tmp/tmp.m3EMdkBowq/T1.mgz
changing data type from float to uchar (noscale = 0)...
MRlchangeType: Building histogram
writing to /tmp/tmp.m3EMdkBowq/T1_N3.mgz...

Tue Apr 1 16:12:10 UTC 2025
mri_nu_correct.mni done

mri_convert /tmp/tmp.m3EMdkBowq/T1_N3.mgz /tmp/tmp.QPCZtAaJKU/T1_N3.nii.gz
mri_convert.bin /tmp/tmp.m3EMdkBowq/T1_N3.mgz /tmp/tmp.QPCZtAaJKU/T1_N3.nii.gz
\$Id: mri_convert.c,v 1.226 2016/02/26 16:15:24 mreuter Exp \$
reading from /tmp/tmp.m3EMdkBowq/T1_N3.mgz...
TR=0.00, TE=0.00, TI=0.00, flip angle=0.00
i_ras = (1, -0, 0)
j_ras = (-0, 1, 0)
k_ras = (-0, -0, 1)
writing to /tmp/tmp.QPCZtAaJKU/T1_N3.nii.gz...

mri_normalize -g 1 -mprage /tmp/tmp.m3EMdkBowq/T1_N3.mgz /tmp/tmp.m3EMdkBowq/T1_norm.mgz
using max gradient = 1.000
assuming input volume is MGH (Van der Kouwe) MP-RAGE
reading from /tmp/tmp.m3EMdkBowq/T1_N3.mgz...
normalizing image...
processing without aseg, no1d=0
MRInormInit():
no Talairach xform detected - using skull bounding box to determine origin
MRInormalize():
MRIsplineNormalize(): npeaks = 21
Starting OpenSpline(): npoints = 21
building Voronoi diagram...
performing soap bubble smoothing, sigma = 8...

Iterating 2 times

3d normalization pass 1 of 2
white matter peak found at 110
white matter peak found at 110
gm peak at 82 (82), valley at 45 (45)
csf peak at 42, setting threshold to 68
building Voronoi diagram...
performing soap bubble smoothing, sigma = 8...

3d normalization pass 2 of 2
white matter peak found at 110
white matter peak found at 110
gm peak at 82 (82), valley at 45 (45)
csf peak at 42, setting threshold to 68

```

building Voronoi diagram...
performing soap bubble smoothing, sigma = 8...
Done iterating -----
***** WARNING - forcing scaling of values to prevent cropping of input [ 0, 289]
***** DISABLING forcing and not doing scaling *****
writing output to /tmp/tmp.m3EMdkBowq/T1_norm.mgz
3D bias adjustment took 1 minutes and 0 seconds.
-----
mri_convert /tmp/tmp.m3EMdkBowq/T1_norm.mgz /tmp/tmp.QPCZtAaJKU/T1_norm.nii.gz
mri_convert.bin /tmp/tmp.m3EMdkBowq/T1_norm.mgz /tmp/tmp.QPCZtAaJKU/T1_norm.nii.gz
$Id: mri_convert.c,v 1.226 2016/02/26 16:15:24 mreuter Exp $
reading from /tmp/tmp.m3EMdkBowq/T1_norm.mgz...
TR=0.00, TE=0.00, TI=0.00, flip angle=0.00
i_ras = (1, -0, 0)
j_ras = (-0, 1, 0)
k_ras = (-0, -0, 1)
writing to /tmp/tmp.QPCZtAaJKU/T1_norm.nii.gz...
-----
Removing job directory...
-----
Skull stripping T1
bet /INPUTS/T1.nii.gz /tmp/tmp.QPCZtAaJKU/T1_mask.nii.gz -R
-----
epi_reg distorted b0 to T1
epi_reg --epi=/INPUTS/b0.nii.gz --t1=/INPUTS/T1.nii.gz --t1brain=/tmp/tmp.QPCZtAaJKU/T1_mask.nii.gz -
-out=/tmp/tmp.QPCZtAaJKU/epi_reg_d
Running FAST segmentation
FLIRT pre-alignment
Running BBR
1.000000 nan nan nan nan nan nan nan nan nan nan nan nan nan nan
terminate called after throwing an instance of 'std::runtime_error'

error: inv(): matrix appears to be singular

what(): inv(): matrix appears to be singular
/extra/fsl/bin/epi_reg: line 399: 1158 Aborted          $FSLDIR/bin/applywarp -i ${vepi} -r ${vrefhead} -o
${vout} --premat=${vout}.mat --interp=spline
-----
converting FSL transform to ANTS transform
c3d_affine_tool -ref /INPUTS/T1.nii.gz -src /INPUTS/b0.nii.gz /tmp/tmp.QPCZtAaJKU/epi_reg_d.mat -
fsl2ras -oitk /tmp/tmp.QPCZtAaJKU/epi_reg_d_ANTS.txt
terminate called after throwing an instance of 'char const*'
-----
ANTS syn registration
antsRegistrationSyNQuick.sh -d 3 -f /extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c.nii.gz -m
/INPUTS/T1.nii.gz -o /tmp/tmp.QPCZtAaJKU/ANTS

```

```
/extra/prepare_input.sh: line 69: 1353 Aborted          c3d_affine_tool -ref /INPUTS/T1.nii.gz -src
/INPUTS/b0.nii.gz /tmp/tmp.QPCZtAaJKU/epi_reg_d.mat -fsl2ras -oitk
/tmp/tmp.QPCZtAaJKU/epi_reg_d_ANTs.txt
```

Mapping parameters

ANTSPATH is /extra/ANTS/bin/ants/bin/

Dimensionality: 3
Output name prefix: /tmp/tmp.QPCZtAaJKU/ANTS
Fixed images: /extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c.nii.gz
Moving images: /INPUTS/T1.nii.gz
Mask images:
Initial transforms:
Number of threads: 1
Spline distance: 26
Transform type: s
MI histogram bins: 32
Precision: d
Use histogram matching 0

=====
=====
antsRegistration call:

```
/extra/ANTS/bin/ants/bin/antsRegistration --verbose 1 --dimensionality 3 --float 0 --collapse-output-
transforms 1 --output
[/tmp/tmp.QPCZtAaJKU/ANTS/tmp/tmp.QPCZtAaJKU/ANTSWarped.nii.gz,/tmp/tmp.QPCZtAaJKU/ANTSIn
verseWarped.nii.gz] --interpolation Linear --use-histogram-matching 0 --winsorize-image-intensities
[0.005,0.995] --initial-moving-transform
[/extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c.nii.gz,/INPUTS/T1.nii.gz,1] --transform Rigid[0.1] --
metric MI[/extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c.nii.gz,/INPUTS/T1.nii.gz,1,32,Regular,0.25]
--convergence [1000x500x250x0,1e-6,10] --shrink-factors 8x4x2x1 --smoothing-sigmas 3x2x1x0vox --
transform Affine[0.1] --metric
MI[/extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c.nii.gz,/INPUTS/T1.nii.gz,1,32,Regular,0.25] --
convergence [1000x500x250x0,1e-6,10] --shrink-factors 8x4x2x1 --smoothing-sigmas 3x2x1x0vox --
transform SyN[0.1,3,0] --metric
MI[/extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c.nii.gz,/INPUTS/T1.nii.gz,1,32] --convergence
[100x70x50x0,1e-6,10] --shrink-factors 8x4x2x1 --smoothing-sigmas 3x2x1x0vox
```

All_Command_lines_OK

Using double precision for computations.

=====
The composite transform comprises the following transforms (in order):

1. Center of mass alignment using fixed image: /extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c.nii.gz
and moving image: /INPUTS/T1.nii.gz (type = Euler3DTransform)

=====
number of levels = 4

number of levels = 4
number of levels = 4
fixed image: /extra/atlasses/mni_icbm152_t1_tal_nlin_asym_09c.nii.gz
moving image: /INPUTS/T1.nii.gz
fixed image: /extra/atlasses/mni_icbm152_t1_tal_nlin_asym_09c.nii.gz
moving image: /INPUTS/T1.nii.gz
fixed image: /extra/atlasses/mni_icbm152_t1_tal_nlin_asym_09c.nii.gz
moving image: /INPUTS/T1.nii.gz
Dimension = 3
Number of stages = 3
Use Histogram Matching false
Winsorize image intensities true
Lower quantile = 0.005
Upper quantile = 0.995
Stage 1 State
Image metric = Mattes
Fixed image = Image (0x4acd5d0)
RTTI typeinfo: itk::Image<double, 3u>
Reference Count: 2
Modified Time: 1630
Debug: Off
Object Name:
Observers:
none
Source: (none)
Source output name: (none)
Release Data: Off
Data Released: False
Global Release Data: Off
PipelineMTime: 0
UpdateMTime: 1431
RealTimeStamp: 0 seconds
LargestPossibleRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [193, 229, 193]
BufferedRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [193, 229, 193]
RequestedRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [193, 229, 193]
Spacing: [1, 1, 1]
Origin: [96, 132, -78]
Direction:
-1 0 0

0 -1 0
0 0 1

IndexToPointMatrix:
-1 0 0
0 -1 0
0 0 1

PointToIndexMatrix:
-1 0 0
0 -1 0
0 0 1

Inverse Direction:
-1 0 0
0 -1 0
0 0 1

PixelContainer:
ImportImageContainer (0x4ac0c60)
RTTI typeinfo: itk::ImportImageContainer<unsigned long, double>
Reference Count: 1
Modified Time: 1428
Debug: Off
Object Name:
Observers:
none
Pointer: 0x7fee67340010
Container manages memory: true
Size: 8530021
Capacity: 8530021

Moving image = Image (0x4af3c80)
RTTI typeinfo: itk::Image<double, 3u>
Reference Count: 2
Modified Time: 1631
Debug: Off
Object Name:
Observers:
none
Source: (none)
Source output name: (none)
Release Data: Off
Data Released: False
Global Release Data: Off
PipelineMTime: 0
UpdateMTime: 1628
RealTimeStamp: 0 seconds

LargestPossibleRegion:

Dimension: 3

Index: [0, 0, 0]

Size: [192, 256, 256]

BufferedRegion:

Dimension: 3

Index: [0, 0, 0]

Size: [192, 256, 256]

RequestedRegion:

Dimension: 3

Index: [0, 0, 0]

Size: [192, 256, 256]

Spacing: [1, 0.976562, 0.976562]

Origin: [95.5, 124.023, -124.023]

Direction:

-1 0 0

0 -1 0

0 0 1

IndexToPointMatrix:

-1 0 0

0 -0.976562 0

0 0 0.976562

PointToIndexMatrix:

-1 0 0

0 -1.024 0

0 0 1.024

Inverse Direction:

-1 0 0

0 -1 0

0 0 1

PixelContainer:

ImportImageContainer (0x4acc460)

RTTI typeid: itk::ImportImageContainer<unsigned long, double>

Reference Count: 1

Modified Time: 1625

Debug: Off

Object Name:

Observers:

none

Pointer: 0x7fee6133f010

Container manages memory: true

Size: 12582912

Capacity: 12582912

Weighting = 1
Sampling strategy = regular
Number of bins = 32
Radius = 4
Sampling percentage = 0.25
Transform = Rigid
Gradient step = 0.1
Update field sigma (voxel space) = 0
Total field sigma (voxel space) = 0
Update field time sigma = 0
Total field time sigma = 0
Number of time indices = 0
Number of time point samples = 0
Stage 2 State
Image metric = Mattes
Fixed image = Image (0x4ad3750)
RTTI typeinfo: itk::Image<double, 3u>
Reference Count: 2
Modified Time: 2024
Debug: Off
Object Name:
Observers:
none
Source: (none)
Source output name: (none)
Release Data: Off
Data Released: False
Global Release Data: Off
PipelineMTime: 0
UpdateMTime: 1825
RealTimeStamp: 0 seconds
LargestPossibleRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [193, 229, 193]
BufferedRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [193, 229, 193]
RequestedRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [193, 229, 193]
Spacing: [1, 1, 1]
Origin: [96, 132, -78]
Direction:
-1 0 0
0 -1 0

0 0 1

IndexToPointMatrix:

-1 0 0

0 -1 0

0 0 1

PointToIndexMatrix:

-1 0 0

0 -1 0

0 0 1

Inverse Direction:

-1 0 0

0 -1 0

0 0 1

PixelContainer:

ImportImageContainer (0x4accba0)

RTTI typeinfo: itk::ImportImageContainer<unsigned long, double>

Reference Count: 1

Modified Time: 1822

Debug: Off

Object Name:

Observers:

none

Pointer: 0x7fee5d22a010

Container manages memory: true

Size: 8530021

Capacity: 8530021

Moving image = Image (0x4ae4cb0)

RTTI typeinfo: itk::Image<double, 3u>

Reference Count: 2

Modified Time: 2025

Debug: Off

Object Name:

Observers:

none

Source: (none)

Source output name: (none)

Release Data: Off

Data Released: False

Global Release Data: Off

PipelineMTime: 0

UpdateMTime: 2022

RealTimeStamp: 0 seconds

LargestPossibleRegion:

Dimension: 3
Index: [0, 0, 0]
Size: [192, 256, 256]
BufferedRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [192, 256, 256]
RequestedRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [192, 256, 256]
Spacing: [1, 0.976562, 0.976562]
Origin: [95.5, 124.023, -124.023]
Direction:
-1 0 0
0 -1 0
0 0 1

IndexToPointMatrix:
-1 0 0
0 -0.976562 0
0 0 0.976562

PointToIndexMatrix:
-1 0 0
0 -1.024 0
0 0 1.024

Inverse Direction:
-1 0 0
0 -1 0
0 0 1

PixelContainer:
ImportImageContainer (0x4ae7b00)
RTTI typeid: itk::ImportImageContainer<unsigned long, double>
Reference Count: 1
Modified Time: 2019
Debug: Off
Object Name:
Observers:
none
Pointer: 0x7fee57229010
Container manages memory: true
Size: 12582912
Capacity: 12582912

Weighting = 1

Sampling strategy = regular
Number of bins = 32
Radius = 4
Sampling percentage = 0.25
Transform = Affine
Gradient step = 0.1
Update field sigma (voxel space) = 0
Total field sigma (voxel space) = 0
Update field time sigma = 0
Total field time sigma = 0
Number of time indices = 0
Number of time point samples = 0
Stage 3 State
Image metric = Mattes
Fixed image = Image (0x4ae6af0)
RTTI typeinfo: itk::Image<double, 3u>
Reference Count: 2
Modified Time: 2418
Debug: Off
Object Name:
Observers:
none
Source: (none)
Source output name: (none)
Release Data: Off
Data Released: False
Global Release Data: Off
PipelineMTime: 0
UpdateMTime: 2219
RealTimeStamp: 0 seconds
LargestPossibleRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [193, 229, 193]
BufferedRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [193, 229, 193]
RequestedRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [193, 229, 193]
Spacing: [1, 1, 1]
Origin: [96, 132, -78]
Direction:
-1 0 0
0 -1 0
0 0 1

IndexToPointMatrix:

-1 0 0
0 -1 0
0 0 1

PointToIndexMatrix:

-1 0 0
0 -1 0
0 0 1

Inverse Direction:

-1 0 0
0 -1 0
0 0 1

PixelContainer:

ImportImageContainer (0x4ae84e0)

RTTI typeinfo: itk::ImportImageContainer<unsigned long, double>

Reference Count: 1

Modified Time: 2216

Debug: Off

Object Name:

Observers:

none

Pointer: 0x7fee53114010

Container manages memory: true

Size: 8530021

Capacity: 8530021

Moving image = Image (0x4aebfa0)

RTTI typeinfo: itk::Image<double, 3u>

Reference Count: 2

Modified Time: 2419

Debug: Off

Object Name:

Observers:

none

Source: (none)

Source output name: (none)

Release Data: Off

Data Released: False

Global Release Data: Off

PipelineMTime: 0

UpdateMTime: 2416

RealTimeStamp: 0 seconds

LargestPossibleRegion:

Dimension: 3

Index: [0, 0, 0]
Size: [192, 256, 256]
BufferedRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [192, 256, 256]
RequestedRegion:
Dimension: 3
Index: [0, 0, 0]
Size: [192, 256, 256]
Spacing: [1, 0.976562, 0.976562]
Origin: [95.5, 124.023, -124.023]
Direction:
-1 0 0
0 -1 0
0 0 1

IndexToPointMatrix:
-1 0 0
0 -0.976562 0
0 0 0.976562

PointToIndexMatrix:
-1 0 0
0 -1.024 0
0 0 1.024

Inverse Direction:
-1 0 0
0 -1 0
0 0 1

PixelContainer:
ImportImageContainer (0x4aec290)
RTTI typeid: itk::ImportImageContainer<unsigned long, double>
Reference Count: 1
Modified Time: 2413
Debug: Off
Object Name:
Observers:
none
Pointer: 0x7fee4d113010
Container manages memory: true
Size: 12582912
Capacity: 12582912

Weighting = 1
Sampling strategy = none

Number of bins = 32
Radius = 4
Sampling percentage = 1
Transform = SyN
Gradient step = 0.1
Update field sigma (voxel space) = 3
Total field sigma (voxel space) = 0
Update field time sigma = 0
Total field time sigma = 0
Number of time indices = 0
Number of time point samples = 0
Registration using 3 total stages.

Stage 0

iterations = 1000x500x250x0
convergence threshold = 1e-06
convergence window size = 10
number of levels = 4
using the Mattes MI metric (number of bins = 32, weight = 1)
preprocessing: winsorizing the image intensities
Shrink factors (level 1 out of 4): [8, 8, 8]
Shrink factors (level 2 out of 4): [4, 4, 4]
Shrink factors (level 3 out of 4): [2, 2, 2]
Shrink factors (level 4 out of 4): [1, 1, 1]
smoothing sigmas per level: [3, 2, 1, 0]
regular sampling (percentage = 0.25)

*** Running Euler3DTransform registration ***

DIAGNOSTIC,	Iteration,	metricValue,	convergenceValue,	ITERATION_TIME_INDEX,	SINCE_LAST
2DIAGNOSTIC,	1,	-4.247077417597e-01,	1.797693134862e+308,	1.4528e+00,	1.4528e+00,
2DIAGNOSTIC,	2,	-4.266438062037e-01,	1.797693134862e+308,	1.4617e+00,	8.9340e-03,
2DIAGNOSTIC,	3,	-4.296145329546e-01,	1.797693134862e+308,	1.4697e+00,	7.9460e-03,
2DIAGNOSTIC,	4,	-4.336796269813e-01,	1.797693134862e+308,	1.4772e+00,	7.4849e-03,
2DIAGNOSTIC,	5,	-4.397438722648e-01,	1.797693134862e+308,	1.4852e+00,	7.9930e-03,
2DIAGNOSTIC,	6,	-4.572374567556e-01,	1.797693134862e+308,	1.4932e+00,	8.0152e-03,
2DIAGNOSTIC,	7,	-4.794602199386e-01,	1.797693134862e+308,	1.5034e+00,	1.0216e-02,
2DIAGNOSTIC,	8,	-5.340873966297e-01,	1.797693134862e+308,	1.5114e+00,	8.0221e-03,
2DIAGNOSTIC,	9,	-5.404915971734e-01,	1.797693134862e+308,	1.5231e+00,	1.1651e-02,
2DIAGNOSTIC,	10,	-5.418995938331e-01,	1.897658672964e-02,	1.5321e+00,	9.0158e-03,
2DIAGNOSTIC,	11,	-5.423400868128e-01,	1.821962447497e-02,	1.5398e+00,	7.6921e-03,
2DIAGNOSTIC,	12,	-5.433055993512e-01,	1.610579621985e-02,	1.5487e+00,	8.9660e-03,
2DIAGNOSTIC,	13,	-5.440449037949e-01,	1.304401628913e-02,	1.5619e+00,	1.3175e-02,
2DIAGNOSTIC,	14,	-5.443032609089e-01,	9.473038972047e-03,	1.5690e+00,	7.1080e-03,
2DIAGNOSTIC,	15,	-5.444223401423e-01,	5.827576826533e-03,	1.5762e+00,	7.2069e-03,
2DIAGNOSTIC,	16,	-5.448066616748e-01,	2.790928472836e-03,	1.5835e+00,	7.2920e-03,
2DIAGNOSTIC,	17,	-5.455842264304e-01,	6.052735435978e-04,	1.5919e+00,	8.3911e-03,
2DIAGNOSTIC,	18,	-5.461476294386e-01,	3.522365081818e-04,	1.5999e+00,	7.9570e-03,

2DIAGNOSTIC, 19, -5.470750670805e-01, 3.116629603752e-04, 1.6140e+00, 1.4119e-02,
2DIAGNOSTIC, 20, -5.477525527262e-01, 3.051086000776e-04, 1.6225e+00, 8.4751e-03,
2DIAGNOSTIC, 21, -5.482864281098e-01, 2.962975400139e-04, 1.6308e+00, 8.3630e-03,
2DIAGNOSTIC, 22, -5.568333356569e-01, 5.001401365390e-04, 1.6399e+00, 9.1171e-03,
2DIAGNOSTIC, 23, -5.660929941727e-01, 8.722168663559e-04, 1.6487e+00, 8.7450e-03,
2DIAGNOSTIC, 24, -5.666684994142e-01, 1.144434844950e-03, 1.6643e+00, 1.5652e-02,
2DIAGNOSTIC, 25, -5.667367049140e-01, 1.294969639153e-03, 1.6724e+00, 8.1060e-03,
2DIAGNOSTIC, 26, -5.668830817384e-01, 1.325142979310e-03, 1.6799e+00, 7.4880e-03,
2DIAGNOSTIC, 27, -5.669463911802e-01, 1.242150498955e-03, 1.6872e+00, 7.2510e-03,
2DIAGNOSTIC, 28, -5.670030921978e-01, 1.057048781836e-03, 1.6945e+00, 7.2818e-03,
2DIAGNOSTIC, 29, -5.671152993582e-01, 8.072465114970e-04, 1.7032e+00, 8.7621e-03,
2DIAGNOSTIC, 30, -5.671796140726e-01, 5.169089598706e-04, 1.7144e+00, 1.1157e-02,
2DIAGNOSTIC, 31, -5.672767015324e-01, 2.067541794163e-04, 1.7230e+00, 8.5850e-03,
2DIAGNOSTIC, 32, -5.672972207796e-01, 3.739467124939e-05, 1.7328e+00, 9.8708e-03,
2DIAGNOSTIC, 33, -5.673421358401e-01, 2.648272625643e-05, 1.7402e+00, 7.3490e-03,
2DIAGNOSTIC, 34, -5.673614452227e-01, 2.318691641003e-05, 1.7487e+00, 8.5330e-03,
2DIAGNOSTIC, 35, -5.674380497382e-01, 2.013423171331e-05, 1.7599e+00, 1.1201e-02,
2DIAGNOSTIC, 36, -5.674405965507e-01, 1.761022534069e-05, 1.7683e+00, 8.3368e-03,
2DIAGNOSTIC, 37, -5.674579836773e-01, 1.482269317389e-05, 1.7775e+00, 9.2380e-03,
2DIAGNOSTIC, 38, -5.674433792259e-01, 1.144270359887e-05, 1.7853e+00, 7.8251e-03,
2DIAGNOSTIC, 39, -5.674445555250e-01, 8.777213153299e-06, 1.7924e+00, 7.0379e-03,
2DIAGNOSTIC, 40, -5.674466790780e-01, 6.337328646432e-06, 1.7995e+00, 7.1149e-03,
2DIAGNOSTIC, 41, -5.674543158328e-01, 4.844477046254e-06, 1.8068e+00, 7.3309e-03,
2DIAGNOSTIC, 42, -5.674587078337e-01, 3.353041342993e-06, 1.8152e+00, 8.4159e-03,
2DIAGNOSTIC, 43, -5.674632673803e-01, 2.304895016084e-06, 1.8264e+00, 1.1174e-02,
2DIAGNOSTIC, 44, -5.674647081412e-01, 1.387915551088e-06, 1.8523e+00, 2.5887e-02,
2DIAGNOSTIC, 45, -5.674647081373e-01, 1.348448495447e-06, 1.8786e+00, 2.6294e-02,
2DIAGNOSTIC, 46, -5.674647081373e-01, 1.273774242874e-06, 1.8876e+00, 9.0270e-03,
2DIAGNOSTIC, 47, -5.674647081373e-01, 1.348378163277e-06, 1.8965e+00, 8.9521e-03,
2DIAGNOSTIC, 48, -5.674647081373e-01, 1.199208851693e-06, 1.9052e+00, 8.6598e-03,
2DIAGNOSTIC, 49, -5.674647081373e-01, 1.021280526179e-06, 1.9137e+00, 8.4782e-03,
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2DIAGNOSTIC, 1, -4.520287021222e-01, 1.797693134862e+308, 3.4377e+00, 1.5240e+00,
2DIAGNOSTIC, 2, -4.523433665651e-01, 1.797693134862e+308, 3.4916e+00, 5.3837e-02,
2DIAGNOSTIC, 3, -4.528433575052e-01, 1.797693134862e+308, 3.5565e+00, 6.4948e-02,
2DIAGNOSTIC, 4, -4.535937723167e-01, 1.797693134862e+308, 3.6195e+00, 6.2956e-02,
2DIAGNOSTIC, 5, -4.542792555124e-01, 1.797693134862e+308, 3.6868e+00, 6.7294e-02,
2DIAGNOSTIC, 6, -4.544482618887e-01, 1.797693134862e+308, 3.7498e+00, 6.3055e-02,
2DIAGNOSTIC, 7, -4.547715335370e-01, 1.797693134862e+308, 3.8270e+00, 7.7203e-02,
2DIAGNOSTIC, 8, -4.550251961974e-01, 1.797693134862e+308, 3.9420e+00, 1.1495e-01,
2DIAGNOSTIC, 9, -4.550807560081e-01, 1.797693134862e+308, 4.0094e+00, 6.7460e-02,
2DIAGNOSTIC, 10, -4.551663591463e-01, 4.814212788193e-04, 4.0771e+00, 6.7715e-02,
2DIAGNOSTIC, 11, -4.555080169007e-01, 3.806799030188e-04, 4.1569e+00, 7.9748e-02,
2DIAGNOSTIC, 12, -4.555338504346e-01, 2.801965344982e-04, 4.2229e+00, 6.5981e-02,
2DIAGNOSTIC, 13, -4.555520141450e-01, 1.945432049838e-04, 4.2885e+00, 6.5644e-02,
2DIAGNOSTIC, 14, -4.557258138428e-01, 1.445869182856e-04, 4.3612e+00, 7.2691e-02,
2DIAGNOSTIC, 15, -4.558676686361e-01, 1.226365912023e-04, 4.4641e+00, 1.0292e-01,
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2DIAGNOSTIC, 17, -4.558948555280e-01, 8.114842180867e-05, 4.5977e+00, 7.0611e-02,
2DIAGNOSTIC, 18, -4.559510401598e-01, 6.930856766534e-05, 4.6712e+00, 7.3508e-02,
2DIAGNOSTIC, 19, -4.560095508760e-01, 5.612238641222e-05, 4.7455e+00, 7.4269e-02,
2DIAGNOSTIC, 20, -4.560827325695e-01, 4.375883514936e-05, 4.8202e+00, 7.4711e-02,
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2DIAGNOSTIC, 22, -4.567050973654e-01, 5.199139650474e-05, 4.9829e+00, 8.6967e-02,
2DIAGNOSTIC, 23, -4.570406684015e-01, 6.561333101365e-05, 5.0558e+00, 7.2965e-02,
2DIAGNOSTIC, 24, -4.572315874477e-01, 8.138673053824e-05, 5.1585e+00, 1.0271e-01,
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2DIAGNOSTIC, 27, -4.579830545342e-01, 1.151808609474e-04, 5.3701e+00, 7.0777e-02,
2DIAGNOSTIC, 28, -4.581581893108e-01, 1.170302438190e-04, 5.4335e+00, 6.3391e-02,
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2DIAGNOSTIC, 30, -4.583608051733e-01, 1.007467960600e-04, 5.5791e+00, 6.4770e-02,
2DIAGNOSTIC, 31, -4.585309370223e-01, 8.525513282919e-05, 5.6602e+00, 8.1086e-02,
2DIAGNOSTIC, 32, -4.586669311709e-01, 7.524740520932e-05, 5.7468e+00, 8.6632e-02,
2DIAGNOSTIC, 33, -4.588105377750e-01, 6.779020734701e-05, 5.8272e+00, 8.0341e-02,
2DIAGNOSTIC, 34, -4.588269814688e-01, 5.830198484290e-05, 5.9069e+00, 7.9714e-02,
2DIAGNOSTIC, 35, -4.588687257002e-01, 4.589768203586e-05, 5.9884e+00, 8.1554e-02,
2DIAGNOSTIC, 36, -4.588759342404e-01, 3.719296884113e-05, 6.0552e+00, 6.6748e-02,
2DIAGNOSTIC, 37, -4.589304437370e-01, 3.068768676965e-05, 6.1404e+00, 8.5172e-02,
2DIAGNOSTIC, 38, -4.589453581064e-01, 2.471293546875e-05, 6.2057e+00, 6.5330e-02,
2DIAGNOSTIC, 39, -4.589667109296e-01, 1.982462608234e-05, 6.2855e+00, 7.9793e-02,
2DIAGNOSTIC, 40, -4.589718445676e-01, 1.398080114077e-05, 6.3595e+00, 7.4030e-02,
2DIAGNOSTIC, 41, -4.589794026526e-01, 9.832691875804e-06, 6.4270e+00, 6.7509e-02,
2DIAGNOSTIC, 42, -4.589804284362e-01, 6.989301988409e-06, 6.4964e+00, 6.9393e-02,
2DIAGNOSTIC, 43, -4.589800694264e-01, 5.753513122587e-06, 6.5640e+00, 6.7534e-02,
2DIAGNOSTIC, 44, -4.589834304531e-01, 4.368153802326e-06, 6.6507e+00, 8.6725e-02,
2DIAGNOSTIC, 45, -4.589881633482e-01, 3.344737858010e-06, 6.7332e+00, 8.2565e-02,
2DIAGNOSTIC, 46, -4.589920364478e-01, 2.246432265852e-06, 6.8094e+00, 7.6159e-02,
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2DIAGNOSTIC, 49, -4.590279441565e-01, 1.844378241252e-06, 7.0157e+00, 7.3181e-02,
2DIAGNOSTIC, 50, -4.590668846127e-01, 2.529759017891e-06, 7.0950e+00, 7.9319e-02,
2DIAGNOSTIC, 51, -4.590853957498e-01, 3.316640406811e-06, 7.1636e+00, 6.8539e-02,
2DIAGNOSTIC, 52, -4.591103323706e-01, 4.129705651158e-06, 7.2586e+00, 9.4999e-02,
2DIAGNOSTIC, 53, -4.591132717534e-01, 4.602833939805e-06, 7.3356e+00, 7.7052e-02,
2DIAGNOSTIC, 54, -4.591109128695e-01, 4.684199896843e-06, 7.4065e+00, 7.0909e-02,
2DIAGNOSTIC, 55, -4.591054169416e-01, 4.359149447970e-06, 7.4680e+00, 6.1498e-02,
2DIAGNOSTIC, 56, -4.591073174520e-01, 3.748965436805e-06, 7.5394e+00, 7.1319e-02,
2DIAGNOSTIC, 57, -4.591060950343e-01, 2.827983094440e-06, 7.6121e+00, 7.2711e-02,
2DIAGNOSTIC, 58, -4.591043241299e-01, 1.872256193889e-06, 7.6856e+00, 7.3527e-02,
DIAGNOSTIC, iteration, metricValue, convergenceValue, ITERATION_TIME_INDEX, SINCE_LAST
2DIAGNOSTIC, 1, -4.132655945816e-01, 1.797693134862e+308, 9.7919e+00, 2.1063e+00,
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2DIAGNOSTIC, 3, -4.137103854310e-01, 1.797693134862e+308, 1.0913e+01, 5.6000e-01,
2DIAGNOSTIC, 4, -4.141579333463e-01, 1.797693134862e+308, 1.1472e+01, 5.5873e-01,
2DIAGNOSTIC, 5, -4.144247978332e-01, 1.797693134862e+308, 1.2117e+01, 6.4597e-01,

2DIAGNOSTIC, 6, -4.145521925841e-01, 1.797693134862e+308, 1.3016e+01, 8.9819e-01,
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 2DIAGNOSTIC, 9, -4.153563057032e-01, 1.797693134862e+308, 1.4688e+01, 5.5293e-01,
 2DIAGNOSTIC, 10, -4.155668259195e-01, 3.402713018936e-04, 1.5248e+01, 5.5992e-01,
 2DIAGNOSTIC, 11, -4.157830832332e-01, 3.111459655802e-04, 1.5971e+01, 7.2305e-01,
 2DIAGNOSTIC, 12, -4.162793892761e-01, 2.993043476559e-04, 1.6780e+01, 8.0833e-01,
 2DIAGNOSTIC, 13, -4.163685314090e-01, 2.790949910154e-04, 1.7338e+01, 5.5827e-01,
 2DIAGNOSTIC, 14, -4.169074230539e-01, 2.844112538029e-04, 1.7882e+01, 5.4385e-01,
 2DIAGNOSTIC, 15, -4.177804571967e-01, 3.146488068798e-04, 1.8955e+01, 1.0733e+00,
 2DIAGNOSTIC, 16, -4.177804541395e-01, 3.173423593282e-04, 1.9522e+01, 5.6700e-01,
 2DIAGNOSTIC, 17, -4.177975756353e-01, 2.935987224094e-04, 2.0065e+01, 5.4342e-01,
 2DIAGNOSTIC, 18, -4.178185517318e-01, 2.526570966582e-04, 2.0626e+01, 5.6094e-01,
 2DIAGNOSTIC, 19, -4.178269867547e-01, 2.142627358098e-04, 2.1178e+01, 5.5141e-01,
 2DIAGNOSTIC, 20, -4.178387250815e-01, 1.670531670468e-04, 2.1825e+01, 6.4700e-01,
 2DIAGNOSTIC, 21, -4.178446280365e-01, 1.159326214588e-04, 2.2374e+01, 5.4912e-01,
 2DIAGNOSTIC, 22, -4.178441978030e-01, 7.475625312703e-05, 2.2933e+01, 5.5921e-01,
 2DIAGNOSTIC, 23, -4.178515614711e-01, 3.303312101127e-05, 2.3830e+01, 8.9723e-01,
 2DIAGNOSTIC, 24, -4.178528661300e-01, 6.492150482755e-06, 2.4549e+01, 7.1826e-01,
 2DIAGNOSTIC, 25, -4.178531801461e-01, 5.462268835764e-06, 2.5456e+01, 9.0747e-01,
 2DIAGNOSTIC, 26, -4.178533593024e-01, 4.119952000593e-06, 2.6097e+01, 6.4071e-01,
 2DIAGNOSTIC, 27, -4.178527616425e-01, 3.014482636808e-06, 2.6756e+01, 6.5873e-01,
 2DIAGNOSTIC, 28, -4.178526039973e-01, 2.320358658783e-06, 2.7400e+01, 6.4492e-01,
 2DIAGNOSTIC, 29, -4.178525627128e-01, 1.752743967201e-06, 2.7963e+01, 5.6251e-01,
 2DIAGNOSTIC, 30, -4.178527501077e-01, 1.430989481681e-06, 2.8600e+01, 6.3735e-01,
 2DIAGNOSTIC, 31, -4.178525581003e-01, 1.223474211054e-06, 2.9239e+01, 6.3879e-01,
 DIAGNOSTIC,Iteration,metricValue,convergenceValue,ITERATION_TIME_INDEX,SINCE_LAST
 2DIAGNOSTIC, 1, -3.924549302735e-01, 1.797693134862e+308, 3.2608e+01, 3.3688e+00,
 Elapsed time (stage 0): 3.3388e+01

Stage 1

iterations = 1000x500x250x0
 convergence threshold = 1.0000e-06
 convergence window size = 10
 number of levels = 4
 using the Mattes MI metric (number of bins = 32, weight = 1.0000e+00)
 preprocessing: winsorizing the image intensities
 Shrink factors (level 1 out of 4): [8, 8, 8]
 Shrink factors (level 2 out of 4): [4, 4, 4]
 Shrink factors (level 3 out of 4): [2, 2, 2]
 Shrink factors (level 4 out of 4): [1, 1, 1]
 smoothing sigmas per level: [3, 2, 1, 0]
 regular sampling (percentage = 2.5000e-01)

*** Running AffineTransform registration ***

DIAGNOSTIC,Iteration,metricValue,convergenceValue,ITERATION_TIME_INDEX,SINCE_LAST

2DIAGNOSTIC, 1, -5.461372083514e-01, 1.797693134862e+308, 1.4266e+00, 1.4266e+00,
2DIAGNOSTIC, 2, -5.475960286404e-01, 1.797693134862e+308, 1.4345e+00, 7.8580e-03,
2DIAGNOSTIC, 3, -5.499225213846e-01, 1.797693134862e+308, 1.4424e+00, 7.9870e-03,
2DIAGNOSTIC, 4, -5.538542435879e-01, 1.797693134862e+308, 1.4501e+00, 7.7028e-03,
2DIAGNOSTIC, 5, -5.612694726082e-01, 1.797693134862e+308, 1.4599e+00, 9.7492e-03,
2DIAGNOSTIC, 6, -5.920293776911e-01, 1.797693134862e+308, 1.4700e+00, 1.0088e-02,
2DIAGNOSTIC, 7, -6.188028954951e-01, 1.797693134862e+308, 1.4814e+00, 1.1435e-02,
2DIAGNOSTIC, 8, -6.231262611811e-01, 1.797693134862e+308, 1.4894e+00, 8.0221e-03,
2DIAGNOSTIC, 9, -6.314481585210e-01, 1.797693134862e+308, 1.4980e+00, 8.5630e-03,
2DIAGNOSTIC, 10, -6.589990203286e-01, 1.318736458878e-02, 1.5067e+00, 8.7450e-03,
2DIAGNOSTIC, 11, -6.865673383990e-01, 1.393444088274e-02, 1.5181e+00, 1.1329e-02,
2DIAGNOSTIC, 12, -7.043132607276e-01, 1.399289645805e-02, 1.5284e+00, 1.0283e-02,
2DIAGNOSTIC, 13, -7.250762893767e-01, 1.359997572052e-02, 1.5394e+00, 1.1063e-02,
2DIAGNOSTIC, 14, -8.147347674474e-01, 1.496107437023e-02, 1.5487e+00, 9.2430e-03,
2DIAGNOSTIC, 15, -8.443004877196e-01, 1.570390683870e-02, 1.5657e+00, 1.7066e-02,
2DIAGNOSTIC, 16, -8.453415746484e-01, 1.575656777058e-02, 1.5734e+00, 7.6702e-03,
2DIAGNOSTIC, 17, -8.483154443658e-01, 1.515954798257e-02, 1.5809e+00, 7.4911e-03,
2DIAGNOSTIC, 18, -8.520003170532e-01, 1.345313796679e-02, 1.5887e+00, 7.8452e-03,
2DIAGNOSTIC, 19, -8.570991189284e-01, 1.098560793554e-02, 1.5963e+00, 7.5409e-03,
2DIAGNOSTIC, 20, -8.634225182105e-01, 8.478568989048e-03, 1.6044e+00, 8.1570e-03,
2DIAGNOSTIC, 21, -8.722795673941e-01, 6.199214883956e-03, 1.6176e+00, 1.3129e-02,
2DIAGNOSTIC, 22, -8.752108554729e-01, 3.990114722357e-03, 1.6252e+00, 7.6809e-03,
2DIAGNOSTIC, 23, -8.773558766357e-01, 2.001242487851e-03, 1.6330e+00, 7.7789e-03,
2DIAGNOSTIC, 24, -8.809258458303e-01, 1.534122025441e-03, 1.6433e+00, 1.0309e-02,
2DIAGNOSTIC, 25, -8.824672113745e-01, 1.450065879730e-03, 1.6513e+00, 7.9401e-03,
2DIAGNOSTIC, 26, -8.863452016603e-01, 1.309531244676e-03, 1.6590e+00, 7.7250e-03,
2DIAGNOSTIC, 27, -8.887776861043e-01, 1.134524865190e-03, 1.6695e+00, 1.0529e-02,
2DIAGNOSTIC, 28, -8.916570584394e-01, 9.572320976047e-04, 1.6775e+00, 7.9601e-03,
2DIAGNOSTIC, 29, -8.926445893163e-01, 7.825840625362e-04, 1.6867e+00, 9.1929e-03,
2DIAGNOSTIC, 30, -8.938189313412e-01, 6.393883116745e-04, 1.6968e+00, 1.0149e-02,
2DIAGNOSTIC, 31, -8.971120053926e-01, 5.921568951732e-04, 1.7067e+00, 9.8472e-03,
2DIAGNOSTIC, 32, -8.997234269659e-01, 5.553315891398e-04, 1.7197e+00, 1.3067e-02,
2DIAGNOSTIC, 33, -8.998631938333e-01, 4.932256274802e-04, 1.7275e+00, 7.7748e-03,
2DIAGNOSTIC, 34, -9.004763944865e-01, 4.349412958733e-04, 1.7356e+00, 8.0419e-03,
2DIAGNOSTIC, 35, -9.008591265946e-01, 3.590635566559e-04, 1.7430e+00, 7.4220e-03,
2DIAGNOSTIC, 36, -9.010269173156e-01, 2.940566306660e-04, 1.7509e+00, 7.9591e-03,
2DIAGNOSTIC, 37, -9.012255313496e-01, 2.300657399114e-04, 1.7591e+00, 8.1689e-03,
2DIAGNOSTIC, 38, -9.015425959428e-01, 1.787652620252e-04, 1.7668e+00, 7.6630e-03,
2DIAGNOSTIC, 39, -9.018969643815e-01, 1.262280697551e-04, 1.7743e+00, 7.5202e-03,
2DIAGNOSTIC, 40, -9.022943855173e-01, 7.817005650242e-05, 1.7859e+00, 1.1648e-02,
2DIAGNOSTIC, 41, -9.025172905985e-01, 5.538953037095e-05, 1.7938e+00, 7.9050e-03,
2DIAGNOSTIC, 42, -9.026454814122e-01, 5.190719498997e-05, 1.8028e+00, 8.9469e-03,
2DIAGNOSTIC, 43, -9.027436221318e-01, 4.560480103054e-05, 1.8107e+00, 7.8850e-03,
2DIAGNOSTIC, 44, -9.029800733490e-01, 4.208435627921e-05, 1.8211e+00, 1.0394e-02,
2DIAGNOSTIC, 45, -9.032609556993e-01, 3.992461475364e-05, 1.8305e+00, 9.4450e-03,
2DIAGNOSTIC, 46, -9.032690717532e-01, 3.543788937454e-05, 1.8381e+00, 7.6208e-03,
2DIAGNOSTIC, 47, -9.033201755140e-01, 2.975616680662e-05, 1.8458e+00, 7.6210e-03,
2DIAGNOSTIC, 48, -9.034021443012e-01, 2.446343026390e-05, 1.8545e+00, 8.7621e-03,

2DIAGNOSTIC, 49, -9.034629128714e-01, 2.000204968323e-05, 1.8660e+00, 1.1503e-02,
2DIAGNOSTIC, 50, -9.034787020992e-01, 1.671068649674e-05, 1.8741e+00, 8.0919e-03,
2DIAGNOSTIC, 51, -9.035622994701e-01, 1.412966083726e-05, 1.8817e+00, 7.5440e-03,
2DIAGNOSTIC, 52, -9.036092153878e-01, 1.155394625671e-05, 1.8893e+00, 7.6320e-03,
2DIAGNOSTIC, 53, -9.036244794037e-01, 8.750237471274e-06, 1.9003e+00, 1.1000e-02,
2DIAGNOSTIC, 54, -9.036367611905e-01, 6.831999574082e-06, 1.9102e+00, 9.9270e-03,
2DIAGNOSTIC, 55, -9.036627710009e-01, 6.331326659125e-06, 1.9199e+00, 9.6889e-03,
2DIAGNOSTIC, 56, -9.036651642220e-01, 5.359382924949e-06, 1.9276e+00, 7.6990e-03,
2DIAGNOSTIC, 57, -9.036681733922e-01, 4.283990187925e-06, 1.9356e+00, 7.9501e-03,
2DIAGNOSTIC, 58, -9.036741813007e-01, 3.415221210716e-06, 1.9433e+00, 7.7438e-03,
2DIAGNOSTIC, 59, -9.036818037959e-01, 2.710309290041e-06, 1.9509e+00, 7.5819e-03,
2DIAGNOSTIC, 60, -9.037031736431e-01, 2.026575331035e-06, 1.9597e+00, 8.8060e-03,
2DIAGNOSTIC, 61, -9.037398345789e-01, 1.892879580086e-06, 1.9764e+00, 1.6668e-02,
2DIAGNOSTIC, 62, -9.037400953932e-01, 1.892623912918e-06, 1.9840e+00, 7.6320e-03,
2DIAGNOSTIC, 63, -9.037410274908e-01, 1.855004895156e-06, 1.9921e+00, 8.1601e-03,
2DIAGNOSTIC, 64, -9.037420744079e-01, 1.762017991121e-06, 2.0005e+00, 8.3790e-03,
2DIAGNOSTIC, 65, -9.037430033477e-01, 1.692726672543e-06, 2.0089e+00, 8.3311e-03,
2DIAGNOSTIC, 66, -9.037447264269e-01, 1.531865958426e-06, 2.0360e+00, 2.7106e-02,
2DIAGNOSTIC, 67, -9.037447264205e-01, 1.294559191754e-06, 2.0636e+00, 2.7649e-02,
2DIAGNOSTIC, 68, -9.037447264205e-01, 1.022587662703e-06, 2.0732e+00, 9.6149e-03,
DIAGNOSTIC, iteration, metricValue, convergenceValue, ITERATION_TIME_INDEX, SINCE_LAST
2DIAGNOSTIC, 1, -7.948865992432e-01, 1.797693134862e+308, 3.6366e+00, 1.5634e+00,
2DIAGNOSTIC, 2, -7.960744856689e-01, 1.797693134862e+308, 3.7128e+00, 7.6239e-02,
2DIAGNOSTIC, 3, -7.972268507280e-01, 1.797693134862e+308, 3.7580e+00, 4.5182e-02,
2DIAGNOSTIC, 4, -7.981416051318e-01, 1.797693134862e+308, 3.8173e+00, 5.9317e-02,
2DIAGNOSTIC, 5, -7.986704072841e-01, 1.797693134862e+308, 3.8792e+00, 6.1886e-02,
2DIAGNOSTIC, 6, -7.989716829409e-01, 1.797693134862e+308, 3.9504e+00, 7.1161e-02,
2DIAGNOSTIC, 7, -7.991923991256e-01, 1.797693134862e+308, 4.0525e+00, 1.0212e-01,
2DIAGNOSTIC, 8, -7.992132380094e-01, 1.797693134862e+308, 4.1136e+00, 6.1123e-02,
2DIAGNOSTIC, 9, -7.992976530114e-01, 1.797693134862e+308, 4.1827e+00, 6.9025e-02,
2DIAGNOSTIC, 10, -7.993722735140e-01, 3.320974905772e-04, 4.2552e+00, 7.2574e-02,
2DIAGNOSTIC, 11, -7.994303581728e-01, 2.078399135764e-04, 4.3294e+00, 7.4156e-02,
2DIAGNOSTIC, 12, -7.994837356896e-01, 1.222455231862e-04, 4.4061e+00, 7.6717e-02,
2DIAGNOSTIC, 13, -7.995573874555e-01, 7.217089902782e-05, 4.5242e+00, 1.1805e-01,
2DIAGNOSTIC, 14, -7.995712273393e-01, 4.627505834734e-05, 4.6147e+00, 9.0508e-02,
2DIAGNOSTIC, 15, -7.995781826254e-01, 3.238718671551e-05, 4.7058e+00, 9.1094e-02,
2DIAGNOSTIC, 16, -7.996176897309e-01, 2.493068666772e-05, 4.7829e+00, 7.7171e-02,
2DIAGNOSTIC, 17, -7.996603627570e-01, 2.174166399827e-05, 4.8478e+00, 6.4882e-02,
2DIAGNOSTIC, 18, -7.996850195403e-01, 1.791795912369e-05, 4.9232e+00, 7.5360e-02,
2DIAGNOSTIC, 19, -7.996948738986e-01, 1.475386922820e-05, 5.0208e+00, 9.7653e-02,
2DIAGNOSTIC, 20, -7.996979602731e-01, 1.208380497576e-05, 5.0998e+00, 7.8957e-02,
2DIAGNOSTIC, 21, -7.997026920449e-01, 9.740921576795e-06, 5.1735e+00, 7.3699e-02,
2DIAGNOSTIC, 22, -7.997034667940e-01, 7.674827582023e-06, 5.2534e+00, 7.9901e-02,
2DIAGNOSTIC, 23, -7.997067789579e-01, 6.393219608651e-06, 5.3343e+00, 8.0911e-02,
2DIAGNOSTIC, 24, -7.997108987744e-01, 5.025464012369e-06, 5.4164e+00, 8.2121e-02,
2DIAGNOSTIC, 25, -7.997139268511e-01, 3.556413636516e-06, 5.5018e+00, 8.5346e-02,
2DIAGNOSTIC, 26, -7.997157917877e-01, 2.540195691986e-06, 5.6148e+00, 1.1305e-01,
2DIAGNOSTIC, 27, -7.997163680083e-01, 2.038119052618e-06, 5.7078e+00, 9.2957e-02,

2DIAGNOSTIC, 28, -7.997164006612e-01, 1.802145134344e-06, 5.8055e+00, 9.7695e-02,
 2DIAGNOSTIC, 29, -7.997164064694e-01, 1.639632088581e-06, 5.9209e+00, 1.1539e-01,
 2DIAGNOSTIC, 30, -7.997164098475e-01, 1.471734220146e-06, 6.0165e+00, 9.5642e-02,
 2DIAGNOSTIC, 31, -7.997164106300e-01, 1.330562597324e-06, 6.1532e+00, 1.3671e-01,
 2DIAGNOSTIC, 32, -7.997164106377e-01, 1.177910447472e-06, 6.2722e+00, 1.1897e-01,
 2DIAGNOSTIC, 33, -7.997164106382e-01, 1.052254447742e-06, 6.4061e+00, 1.3392e-01,
 DIAGNOSTIC,iteration,metricValue,convergenceValue,ITERATION_TIME_INDEX,SINCE_LAST
 2DIAGNOSTIC, 1, -7.156625958409e-01, 1.797693134862e+308, 8.5303e+00, 2.1242e+00,
 2DIAGNOSTIC, 2, -7.162564763063e-01, 1.797693134862e+308, 9.1194e+00, 5.8906e-01,
 2DIAGNOSTIC, 3, -7.167521371089e-01, 1.797693134862e+308, 9.6862e+00, 5.6683e-01,
 2DIAGNOSTIC, 4, -7.169799487467e-01, 1.797693134862e+308, 1.0355e+01, 6.6853e-01,
 2DIAGNOSTIC, 5, -7.170176712814e-01, 1.797693134862e+308, 1.1302e+01, 9.4726e-01,
 2DIAGNOSTIC, 6, -7.170211770720e-01, 1.797693134862e+308, 1.1870e+01, 5.6826e-01,
 2DIAGNOSTIC, 7, -7.170329171984e-01, 1.797693134862e+308, 1.2460e+01, 5.8949e-01,
 2DIAGNOSTIC, 8, -7.170471208913e-01, 1.797693134862e+308, 1.3049e+01, 5.8952e-01,
 2DIAGNOSTIC, 9, -7.170692684264e-01, 1.797693134862e+308, 1.3635e+01, 5.8617e-01,
 2DIAGNOSTIC, 10, -7.171353698959e-01, 9.894544802859e-05, 1.4405e+01, 7.6997e-01,
 2DIAGNOSTIC, 11, -7.171367964517e-01, 4.951517778912e-05, 1.4982e+01, 5.7634e-01,
 2DIAGNOSTIC, 12, -7.171385358402e-01, 2.349463255188e-05, 1.5565e+01, 5.8321e-01,
 2DIAGNOSTIC, 13, -7.171466692071e-01, 1.479791144872e-05, 1.6140e+01, 5.7523e-01,
 2DIAGNOSTIC, 14, -7.171672232266e-01, 1.320686907216e-05, 1.6820e+01, 6.7933e-01,
 2DIAGNOSTIC, 15, -7.172217196593e-01, 1.323019527773e-05, 1.7589e+01, 7.6946e-01,
 2DIAGNOSTIC, 16, -7.172412771358e-01, 1.277206112177e-05, 1.8432e+01, 8.4268e-01,
 2DIAGNOSTIC, 17, -7.172476474251e-01, 1.182786878425e-05, 1.9016e+01, 5.8389e-01,
 2DIAGNOSTIC, 18, -7.172491541231e-01, 1.043482365189e-05, 1.9598e+01, 5.8231e-01,
 2DIAGNOSTIC, 19, -7.172554559686e-01, 8.935467141542e-06, 2.0258e+01, 6.6022e-01,
 2DIAGNOSTIC, 20, -7.172704919662e-01, 8.499364917668e-06, 2.0924e+01, 6.6622e-01,
 2DIAGNOSTIC, 21, -7.172943961526e-01, 7.929826262042e-06, 2.1772e+01, 8.4769e-01,
 2DIAGNOSTIC, 22, -7.172956332142e-01, 6.872512450670e-06, 2.2344e+01, 5.7220e-01,
 2DIAGNOSTIC, 23, -7.172997338600e-01, 5.624307741814e-06, 2.4528e+01, 2.1841e+00,
 2DIAGNOSTIC, 24, -7.172997338550e-01, 4.403839763613e-06, 2.6628e+01, 2.1000e+00,
 2DIAGNOSTIC, 25, -7.172997338550e-01, 3.844005392488e-06, 2.7383e+01, 7.5454e-01,
 2DIAGNOSTIC, 26, -7.172997338550e-01, 3.376561504245e-06, 2.8053e+01, 6.6982e-01,
 2DIAGNOSTIC, 27, -7.172997338550e-01, 2.836727682226e-06, 2.8709e+01, 6.5633e-01,
 2DIAGNOSTIC, 28, -7.172997338550e-01, 2.204869918289e-06, 2.9375e+01, 6.6609e-01,
 2DIAGNOSTIC, 29, -7.172997338550e-01, 1.599930380909e-06, 3.0036e+01, 6.6064e-01,
 2DIAGNOSTIC, 30, -7.172997338550e-01, 1.178462164013e-06, 3.0686e+01, 6.5075e-01,
 2DIAGNOSTIC, 31, -7.172997338550e-01, 1.078827233922e-06, 3.1442e+01, 7.5515e-01,
 DIAGNOSTIC,iteration,metricValue,convergenceValue,ITERATION_TIME_INDEX,SINCE_LAST
 2DIAGNOSTIC, 1, -6.528296129041e-01, 1.797693134862e+308, 3.5202e+01, 3.7600e+00,
 Elapsed time (stage 1): 3.5979e+01

Stage 2

iterations = 100x70x50x0
 convergence threshold = 1.0000e-06
 convergence window size = 10
 number of levels = 4

using the Mattes MI metric (number of bins = 32, weight = 1.0000e+00)

preprocessing: winsorizing the image intensities

Shrink factors (level 1 out of 4): [8, 8, 8]

Shrink factors (level 2 out of 4): [4, 4, 4]

Shrink factors (level 3 out of 4): [2, 2, 2]

Shrink factors (level 4 out of 4): [1, 1, 1]

smoothing sigmas per level: [3, 2, 1, 0]

Using default NONE metricSamplingStrategy

*** Running SyN registration (varianceForUpdateField = 3.0000e+00, varianceForTotalField = 0.0000e+00)

XXDIAGNOSTIC	Iteration	metricValue	convergenceValue	ITERATION_TIME_INDEX	SINCE_LAST
1DIAGNOSTIC	1	-8.812114974723e-01	1.797693134862e+308	1.4546e+00	1.4546e+00
1DIAGNOSTIC	2	-9.114947524035e-01	1.797693134862e+308	1.5379e+00	8.3343e-02
1DIAGNOSTIC	3	-9.320690026265e-01	1.797693134862e+308	1.6223e+00	8.4353e-02
1DIAGNOSTIC	4	-9.472568539127e-01	1.797693134862e+308	1.7060e+00	8.3698e-02
1DIAGNOSTIC	5	-9.576244060781e-01	1.797693134862e+308	1.7889e+00	8.2920e-02
1DIAGNOSTIC	6	-9.652755086958e-01	1.797693134862e+308	1.8756e+00	8.6726e-02
1DIAGNOSTIC	7	-9.701680139671e-01	1.797693134862e+308	1.9656e+00	9.0004e-02
1DIAGNOSTIC	8	-9.742291584959e-01	1.797693134862e+308	2.0539e+00	8.8276e-02
1DIAGNOSTIC	9	-9.784199531911e-01	1.797693134862e+308	2.1473e+00	9.3418e-02
1DIAGNOSTIC	10	-9.821462233838e-01	6.015412054206e-03	2.2416e+00	9.4315e-02
1DIAGNOSTIC	11	-9.853746880794e-01	4.016391079720e-03	2.3306e+00	8.8978e-02
1DIAGNOSTIC	12	-9.880025696927e-01	2.808256046136e-03	2.4211e+00	9.0478e-02
1DIAGNOSTIC	13	-9.903200431725e-01	2.054729208101e-03	2.5088e+00	8.7731e-02
1DIAGNOSTIC	14	-9.930534101901e-01	1.600047732962e-03	2.5966e+00	8.7744e-02
1DIAGNOSTIC	15	-9.958136838482e-01	1.316495052237e-03	2.6843e+00	8.7747e-02
1DIAGNOSTIC	16	-9.977340008461e-01	1.123159543752e-03	2.7725e+00	8.8160e-02
1DIAGNOSTIC	17	-9.992199878129e-01	9.595784546095e-04	2.8613e+00	8.8832e-02
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1DIAGNOSTIC	19	-1.003012662468e+00	7.172332346375e-04	3.0412e+00	8.9405e-02
1DIAGNOSTIC	20	-1.004953861025e+00	6.370746109869e-04	3.1322e+00	9.1037e-02
1DIAGNOSTIC	21	-1.006141794240e+00	5.662580150505e-04	3.2253e+00	9.3062e-02
1DIAGNOSTIC	22	-1.007564613526e+00	5.029013466644e-04	3.3135e+00	8.8192e-02
1DIAGNOSTIC	23	-1.008879709458e+00	4.435942800384e-04	3.3999e+00	8.6391e-02
1DIAGNOSTIC	24	-1.010257221838e+00	3.967516833047e-04	3.4868e+00	8.6916e-02
1DIAGNOSTIC	25	-1.011241459863e+00	3.595336012269e-04	3.5738e+00	8.7029e-02
1DIAGNOSTIC	26	-1.012632251021e+00	3.283481535839e-04	3.6609e+00	8.7078e-02
1DIAGNOSTIC	27	-1.013331236484e+00	2.917332293615e-04	3.7488e+00	8.7870e-02
1DIAGNOSTIC	28	-1.014165435799e+00	2.588540005556e-04	3.8370e+00	8.8281e-02
1DIAGNOSTIC	29	-1.014916423997e+00	2.293807962202e-04	3.9273e+00	9.0263e-02
1DIAGNOSTIC	30	-1.015311165750e+00	2.026008936122e-04	4.0190e+00	9.1725e-02
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1DIAGNOSTIC, 28, -9.030553887538e-01, 1.810520041133e-04, 1.4371e+02, 3.4667e+00,
1DIAGNOSTIC, 29, -9.036507691461e-01, 1.668975347349e-04, 1.4724e+02, 3.5340e+00,
1DIAGNOSTIC, 30, -9.042780861426e-01, 1.546458483397e-04, 1.5075e+02, 3.5127e+00,
1DIAGNOSTIC, 31, -9.048887407942e-01, 1.435801408050e-04, 1.5419e+02, 3.4399e+00,
1DIAGNOSTIC, 32, -9.054306043470e-01, 1.331842960457e-04, 1.5770e+02, 3.5099e+00,
1DIAGNOSTIC, 33, -9.059336044373e-01, 1.237767869127e-04, 1.6122e+02, 3.5121e+00,
1DIAGNOSTIC, 34, -9.064606887225e-01, 1.152049433196e-04, 1.6464e+02, 3.4275e+00,
1DIAGNOSTIC, 35, -9.069308713897e-01, 1.072728106675e-04, 1.6813e+02, 3.4890e+00,

1DIAGNOSTIC, 36, -9.073784997746e-01, 1.002009374195e-04, 1.7171e+02, 3.5779e+00,
1DIAGNOSTIC, 37, -9.078343984596e-01, 9.318142642561e-05, 1.7522e+02, 3.5091e+00,
1DIAGNOSTIC, 38, -9.082523134095e-01, 8.673506456964e-05, 1.7881e+02, 3.5943e+00,
1DIAGNOSTIC, 39, -9.086516016904e-01, 8.045398248422e-05, 1.8238e+02, 3.5693e+00,
1DIAGNOSTIC, 40, -9.090639572184e-01, 7.506822312866e-05, 1.8590e+02, 3.5167e+00,
1DIAGNOSTIC, 41, -9.094545921056e-01, 7.054159779400e-05, 1.8956e+02, 3.6635e+00,
1DIAGNOSTIC, 42, -9.098239838933e-01, 6.639218240072e-05, 1.9314e+02, 3.5760e+00,
1DIAGNOSTIC, 43, -9.102184753077e-01, 6.272078838916e-05, 1.9659e+02, 3.4548e+00,
1DIAGNOSTIC, 44, -9.105847420169e-01, 5.966931202719e-05, 2.0010e+02, 3.5028e+00,
1DIAGNOSTIC, 45, -9.109105409150e-01, 5.666744379733e-05, 2.0350e+02, 3.4007e+00,
1DIAGNOSTIC, 46, -9.112332953879e-01, 5.369764976839e-05, 2.0700e+02, 3.4998e+00,
1DIAGNOSTIC, 47, -9.115526292058e-01, 5.095869219210e-05, 2.1069e+02, 3.6892e+00,
1DIAGNOSTIC, 48, -9.118006825968e-01, 4.786153237352e-05, 2.1421e+02, 3.5191e+00,
1DIAGNOSTIC, 49, -9.120703048771e-01, 4.465043042418e-05, 2.1775e+02, 3.5404e+00,
1DIAGNOSTIC, 50, -9.123675262460e-01, 4.180295239202e-05, 2.2128e+02, 3.5295e+00,
Elapsed time (stage 2): 226.2

Total elapsed time: 295.7

Apply linear transform to T1

```
antsApplyTransforms -d 3 -i /tmp/tmp.QPCZtAaJKU/T1_norm.nii.gz -r  
/extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c_2_5.nii.gz -n BSpline -t  
/tmp/tmp.QPCZtAaJKU/ANTS0GenericAffine.mat -o /tmp/tmp.QPCZtAaJKU/T1_norm_lin_atlas_2_5.nii.gz
```

Apply linear transform to distorted b0

```
antsApplyTransforms -d 3 -i /INPUTS/b0.nii.gz -r  
/extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c_2_5.nii.gz -n BSpline -t  
/tmp/tmp.QPCZtAaJKU/ANTS0GenericAffine.mat -t /tmp/tmp.QPCZtAaJKU/epi_reg_d_ANTS.txt -o  
/tmp/tmp.QPCZtAaJKU/b0_d_lin_atlas_2_5.nii.gz  
Transform file does not exist: /tmp/tmp.QPCZtAaJKU/epi_reg_d_ANTS.txt
```

Apply nonlinear transform to T1

```
antsApplyTransforms -d 3 -i /tmp/tmp.QPCZtAaJKU/T1_norm.nii.gz -r  
/extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c_2_5.nii.gz -n BSpline -t  
/tmp/tmp.QPCZtAaJKU/ANTS1Warp.nii.gz -t /tmp/tmp.QPCZtAaJKU/ANTS0GenericAffine.mat -o  
/tmp/tmp.QPCZtAaJKU/T1_norm_nonlin_atlas_2_5.nii.gz
```

Apply nonlinear transform to distorted b0

```
antsApplyTransforms -d 3 -i /INPUTS/b0.nii.gz -r  
/extra/atlas/mni_icbm152_t1_tal_nlin_asym_09c_2_5.nii.gz -n BSpline -t  
/tmp/tmp.QPCZtAaJKU/ANTS1Warp.nii.gz -t /tmp/tmp.QPCZtAaJKU/ANTS0GenericAffine.mat -t  
/tmp/tmp.QPCZtAaJKU/epi_reg_d_ANTS.txt -o /tmp/tmp.QPCZtAaJKU/b0_d_nonlin_atlas_2_5.nii.gz  
Transform file does not exist: /tmp/tmp.QPCZtAaJKU/epi_reg_d_ANTS.txt
```

Copying results to results path...

cp: cannot stat '/tmp/tmp.QPCZtAaJKU/epi_reg_d_ANTS.txt': No such file or directory

cp: cannot stat '/tmp/tmp.QPCZtAaJKU/b0_d_lin_atlas_2_5.nii.gz': No such file or directory

cp: cannot stat '/tmp/tmp.QPCZtAaJKU/b0_d_nonlin_atlas_2_5.nii.gz': No such file or directory

Removing job directory...

Performing inference on FOLD: 1

T1 input path: /OUTPUTS/T1_norm_lin_atlas_2_5.nii.gz

b0 input path: /OUTPUTS/b0_d_lin_atlas_2_5.nii.gz

b0 output path: /OUTPUTS/b0_u_lin_atlas_2_5_FOLD_1.nii.gz

Model path:

/extra/dual_channel_unet/num_fold_1_total_folds_5_seed_1_num_epochs_100_lr_0.0001_betas_(0.9, 0.999)_weight_decay_1e-05_num_epoch_97.pth

Traceback (most recent call last):

File "/extra/pytorch/lib/python3.6/site-packages/nibabel/loadsave.py", line 40, in load
stat_result = os.stat(filename)

FileNotFoundError: [Errno 2] No such file or directory: '/OUTPUTS/b0_d_lin_atlas_2_5.nii.gz'

During handling of the above exception, another exception occurred:

Traceback (most recent call last):

File "/extra/inference.py", line 90, in <module>
img_model = inference(T1_input_path, b0_input_path, model, device)

File "/extra/inference.py", line 32, in inference

img_b0_d = np.expand_dims(util.get_nii_img(b0_d_path), axis=3)

File "/extra/util.py", line 24, in get_nii_img

nii = nib.load(path_nii)

File "/extra/pytorch/lib/python3.6/site-packages/nibabel/loadsave.py", line 42, in load
raise FileNotFoundError("No such file or no access: '%s'" % filename)

FileNotFoundError: No such file or no access: '/OUTPUTS/b0_d_lin_atlas_2_5.nii.gz'

Performing inference on FOLD: 2

T1 input path: /OUTPUTS/T1_norm_lin_atlas_2_5.nii.gz

b0 input path: /OUTPUTS/b0_d_lin_atlas_2_5.nii.gz

b0 output path: /OUTPUTS/b0_u_lin_atlas_2_5_FOLD_2.nii.gz

Model path:

/extra/dual_channel_unet/num_fold_2_total_folds_5_seed_1_num_epochs_100_lr_0.0001_betas_(0.9, 0.999)_weight_decay_1e-05_num_epoch_98.pth

Traceback (most recent call last):

File "/extra/pytorch/lib/python3.6/site-packages/nibabel/loadsave.py", line 40, in load
stat_result = os.stat(filename)

FileNotFoundError: [Errno 2] No such file or directory: '/OUTPUTS/b0_d_lin_atlas_2_5.nii.gz'

During handling of the above exception, another exception occurred:

Traceback (most recent call last):

File "/extra/inference.py", line 90, in <module>
img_model = inference(T1_input_path, b0_input_path, model, device)

File "/extra/inference.py", line 32, in inference

img_b0_d = np.expand_dims(util.get_nii_img(b0_d_path), axis=3)

File "/extra/util.py", line 24, in get_nii_img

nii = nib.load(path_nii)

```
File "/extra/pytorch/lib/python3.6/site-packages/nibabel/loadsave.py", line 42, in load
    raise FileNotFoundError("No such file or no access: '%s'" % filename)
FileNotFoundError: No such file or no access: '/OUTPUTS/b0_d_lin_atlas_2_5.nii.gz'
Performing inference on FOLD: 3
T1 input path: /OUTPUTS/T1_norm_lin_atlas_2_5.nii.gz
b0 input path: /OUTPUTS/b0_d_lin_atlas_2_5.nii.gz
b0 output path: /OUTPUTS/b0_u_lin_atlas_2_5_FOLD_3.nii.gz
Model path:
/extra/dual_channel_unet/num_fold_3_total_folds_5_seed_1_num_epochs_100_lr_0.0001_betas_(0.9,
0.999)_weight_decay_1e-05_num_epoch_90.pth
Traceback (most recent call last):
  File "/extra/pytorch/lib/python3.6/site-packages/nibabel/loadsave.py", line 40, in load
    stat_result = os.stat(filename)
FileNotFoundError: [Errno 2] No such file or directory: '/OUTPUTS/b0_d_lin_atlas_2_5.nii.gz'
```

During handling of the above exception, another exception occurred:

```
Traceback (most recent call last):
  File "/extra/inference.py", line 90, in <module>
    img_model = inference(T1_input_path, b0_input_path, model, device)
  File "/extra/inference.py", line 32, in inference
    img_b0_d = np.expand_dims(util.get_nii_img(b0_d_path), axis=3)
  File "/extra/util.py", line 24, in get_nii_img
    nii = nib.load(path_nii)
  File "/extra/pytorch/lib/python3.6/site-packages/nibabel/loadsave.py", line 42, in load
    raise FileNotFoundError("No such file or no access: '%s'" % filename)
FileNotFoundError: No such file or no access: '/OUTPUTS/b0_d_lin_atlas_2_5.nii.gz'
Performing inference on FOLD: 4
T1 input path: /OUTPUTS/T1_norm_lin_atlas_2_5.nii.gz
b0 input path: /OUTPUTS/b0_d_lin_atlas_2_5.nii.gz
b0 output path: /OUTPUTS/b0_u_lin_atlas_2_5_FOLD_4.nii.gz
Model path:
/extra/dual_channel_unet/num_fold_4_total_folds_5_seed_1_num_epochs_100_lr_0.0001_betas_(0.9,
0.999)_weight_decay_1e-05_num_epoch_90.pth
Traceback (most recent call last):
  File "/extra/pytorch/lib/python3.6/site-packages/nibabel/loadsave.py", line 40, in load
    stat_result = os.stat(filename)
FileNotFoundError: [Errno 2] No such file or directory: '/OUTPUTS/b0_d_lin_atlas_2_5.nii.gz'
```

During handling of the above exception, another exception occurred:

```
Traceback (most recent call last):
  File "/extra/inference.py", line 90, in <module>
    img_model = inference(T1_input_path, b0_input_path, model, device)
  File "/extra/inference.py", line 32, in inference
    img_b0_d = np.expand_dims(util.get_nii_img(b0_d_path), axis=3)
  File "/extra/util.py", line 24, in get_nii_img
    nii = nib.load(path_nii)
```

```
File "/extra/pytorch/lib/python3.6/site-packages/nibabel/loadsave.py", line 42, in load
    raise FileNotFoundError("No such file or no access: '%s'" % filename)
FileNotFoundError: No such file or no access: '/OUTPUTS/b0_d_lin_atlas_2_5.nii.gz'
Performing inference on FOLD: 5
T1 input path: /OUTPUTS/T1_norm_lin_atlas_2_5.nii.gz
b0 input path: /OUTPUTS/b0_d_lin_atlas_2_5.nii.gz
b0 output path: /OUTPUTS/b0_u_lin_atlas_2_5_FOLD_5.nii.gz
Model path:
/extra/dual_channel_unet/num_fold_5_total_folds_5_seed_1_num_epochs_100_lr_0.0001_betas_(0.9,
0.999)_weight_decay_1e-05_num_epoch_88.pth
Traceback (most recent call last):
  File "/extra/pytorch/lib/python3.6/site-packages/nibabel/loadsave.py", line 40, in load
    stat_result = os.stat(filename)
FileNotFoundError: [Errno 2] No such file or directory: '/OUTPUTS/b0_d_lin_atlas_2_5.nii.gz'
```

During handling of the above exception, another exception occurred:

```
Traceback (most recent call last):
  File "/extra/inference.py", line 90, in <module>
    img_model = inference(T1_input_path, b0_input_path, model, device)
  File "/extra/inference.py", line 32, in inference
    img_b0_d = np.expand_dims(util.get_nii_img(b0_d_path), axis=3)
  File "/extra/util.py", line 24, in get_nii_img
    nii = nib.load(path_nii)
  File "/extra/pytorch/lib/python3.6/site-packages/nibabel/loadsave.py", line 42, in load
    raise FileNotFoundError("No such file or no access: '%s'" % filename)
FileNotFoundError: No such file or no access: '/OUTPUTS/b0_d_lin_atlas_2_5.nii.gz'
Taking ensemble average
Image Exception : #63 :: No image files match: /OUTPUTS/b0_u_lin_atlas_2_5_FOLD_*
terminate called after throwing an instance of 'std::runtime_error'
  what(): No image files match: /OUTPUTS/b0_u_lin_atlas_2_5_FOLD_*
/extra/pipeline.sh: line 49: 1777 Aborted          fslmerge -t /OUTPUTS/b0_u_lin_atlas_2_5_merged.nii.gz
/OUTPUTS/b0_u_lin_atlas_2_5_FOLD_*.nii.gz
Image Exception : #63 :: No image files match: /OUTPUTS/b0_u_lin_atlas_2_5_merged
terminate called after throwing an instance of 'std::runtime_error'
  what(): No image files match: /OUTPUTS/b0_u_lin_atlas_2_5_merged
/extra/pipeline.sh: line 50: 1778 Aborted          fslmaths /OUTPUTS/b0_u_lin_atlas_2_5_merged.nii.gz -
Tmean /OUTPUTS/b0_u_lin_atlas_2_5.nii.gz
Applying inverse xform to undistorted b0
file /OUTPUTS/b0_u_lin_atlas_2_5.nii.gz does not exist .
Transform file does not exist: /OUTPUTS/epi_reg_d_ANTs.txt
Applying slight smoothing to distorted b0
Running topup
Image Exception : #63 :: No image files match: /OUTPUTS/b0_u
terminate called after throwing an instance of 'std::runtime_error'
  what(): No image files match: /OUTPUTS/b0_u
/extra/pipeline.sh: line 65: 1809 Aborted          fslmerge -t /OUTPUTS/b0_all.nii.gz
/OUTPUTS/b0_d_smooth.nii.gz /OUTPUTS/b0_u.nii.gz
```


Image Exception : #63 :: No image files match: /OUTPUTS/b0_all
Image Exception : #22 :: Failed to read volume /OUTPUTS/b0_all.nii.gz
Error : No image files match: /OUTPUTS/b0_all

Part of FSL (ID: 6.0.1)
topup

Usage:
topup --imain=<some 4D image> --datain=<text file> --config=<text file with parameters> --
out=my_topup_results