

Image Registration Tutorial

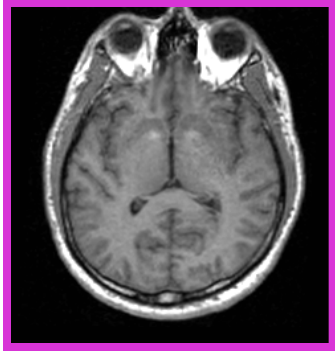
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Harvard University

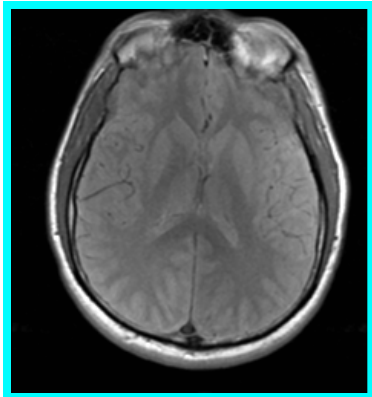
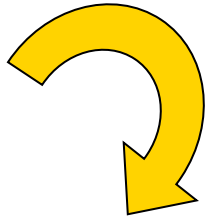
Objective

- Guiding you step-by-step through the process of automatically registering two structural MR datasets acquired on two different subjects using rigid and non rigid registration
- This tutorial is built upon the Registration Case Libray 31 tutorial available at http://www.na-mic.org/Wiki/index.php/Projects:RegistrationLibrary:RegLib_C19

Motivation



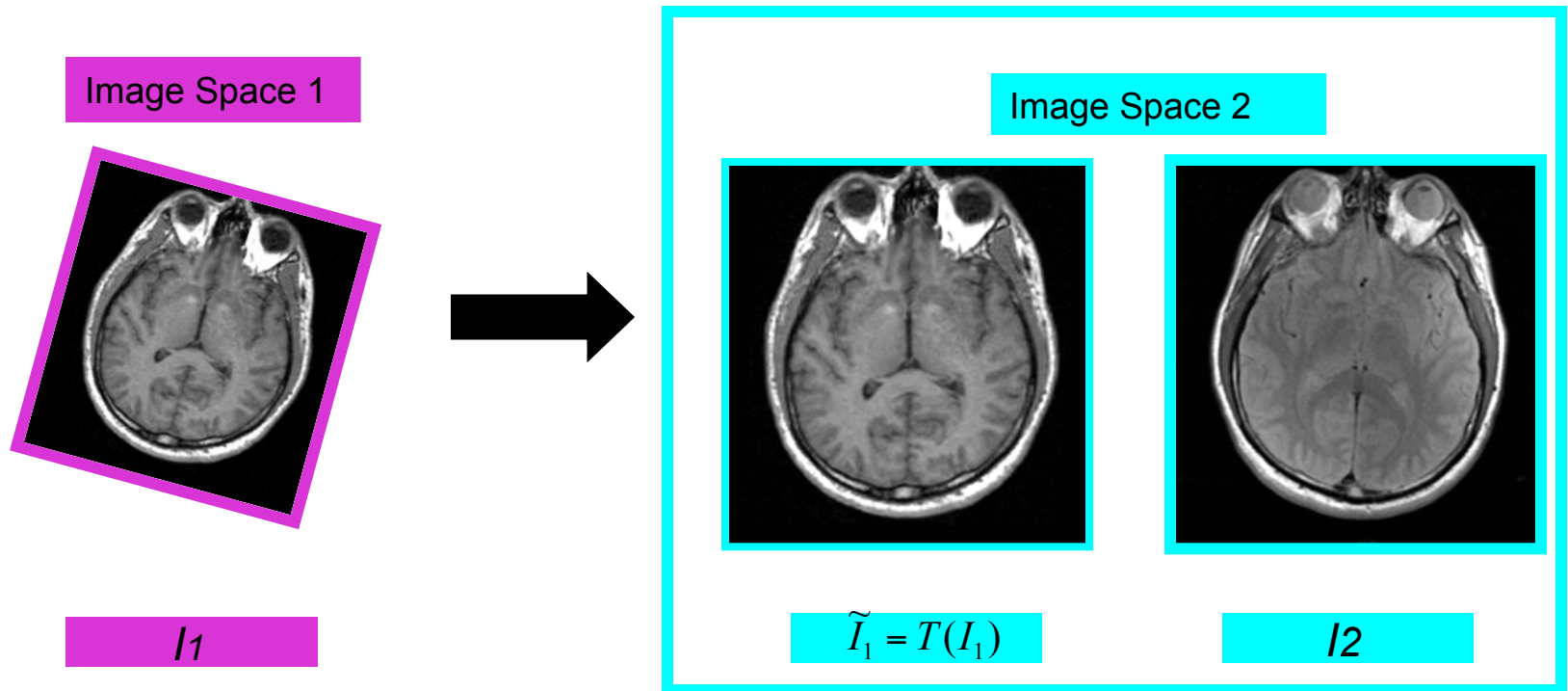
Dataset 1



Dataset 2

Registration algorithms bring multiple image data sets into spatial alignment, in order to achieve **anatomical agreement**.

Apply the registration transform

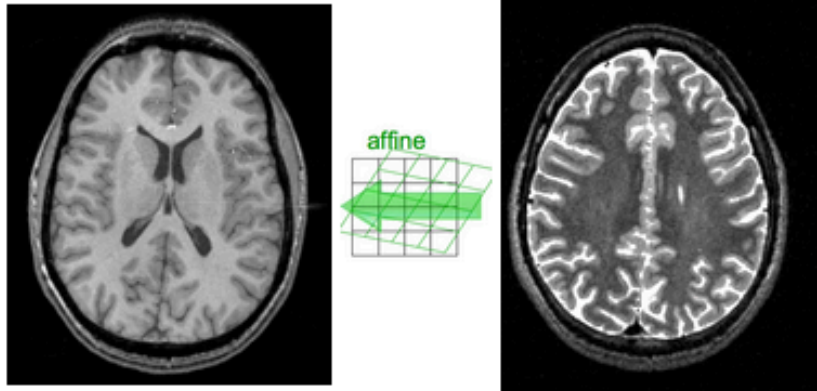


By applying the registration transform to the initial volume I_1 , we'll generate a new volume spatially aligned with the volume I_2 . This allows the extraction of complementary information from the two volumes.

Dataset

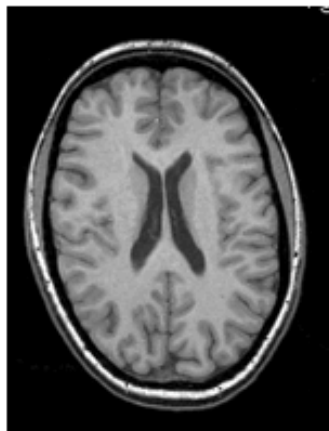
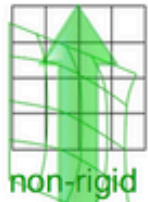
- The dataset includes two T1-weighted and T2-weighted MR scans acquired on two healthy subjects.
- The dataset is Registration Case 19 of the NAMIC registration case library (P.I. Dr. Dominik Meier, Ph.D.)

Registration pipeline

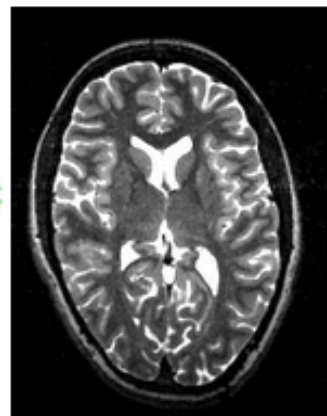


subj 1: T1

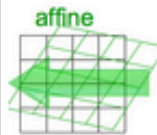
subj 1: T2



subj 2: T1



subj 2: T2



Step 1:

Subject A, T2 to T1 registration

Step 2:

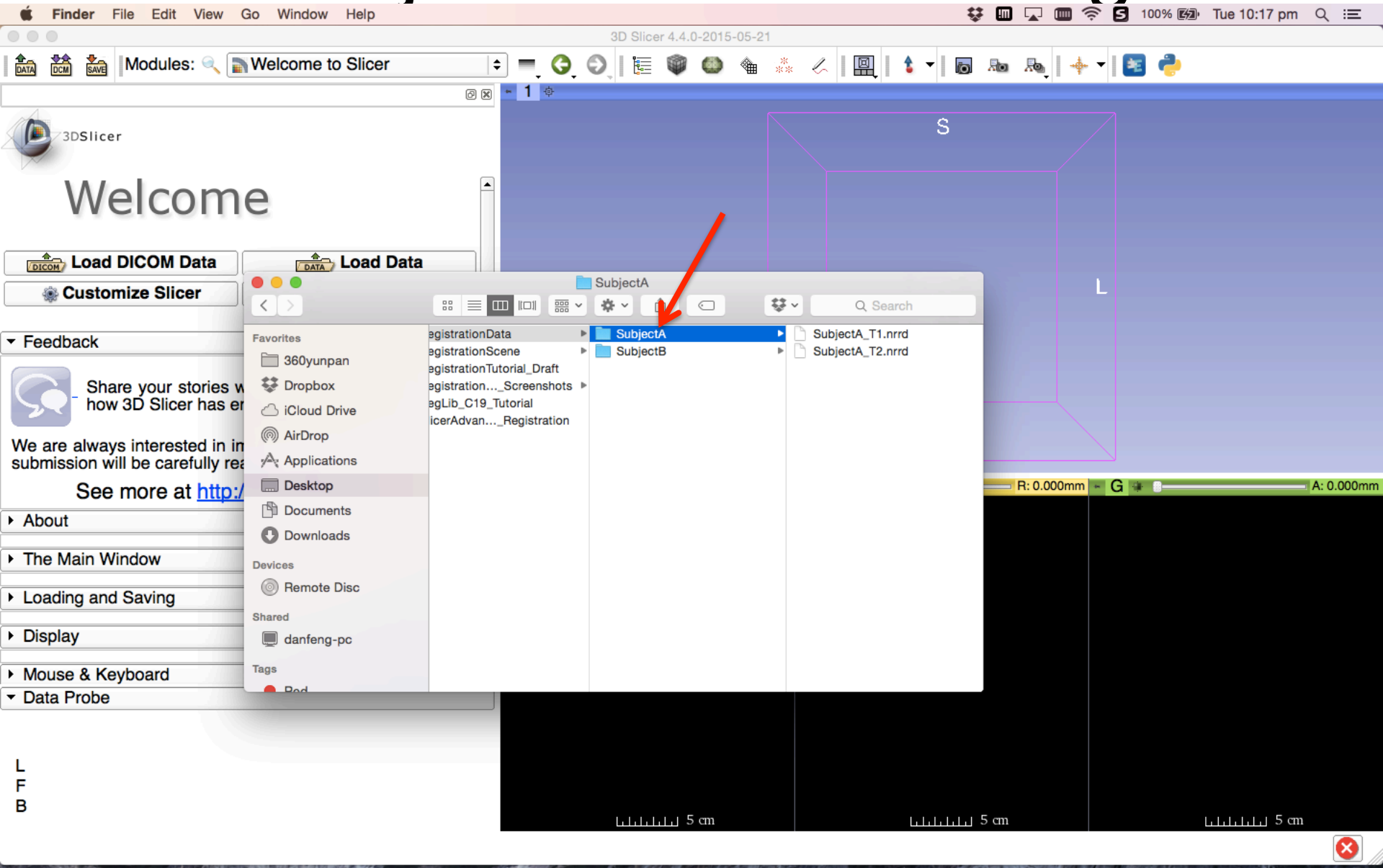
Subject B, T2 to T1 registration

Step 3:

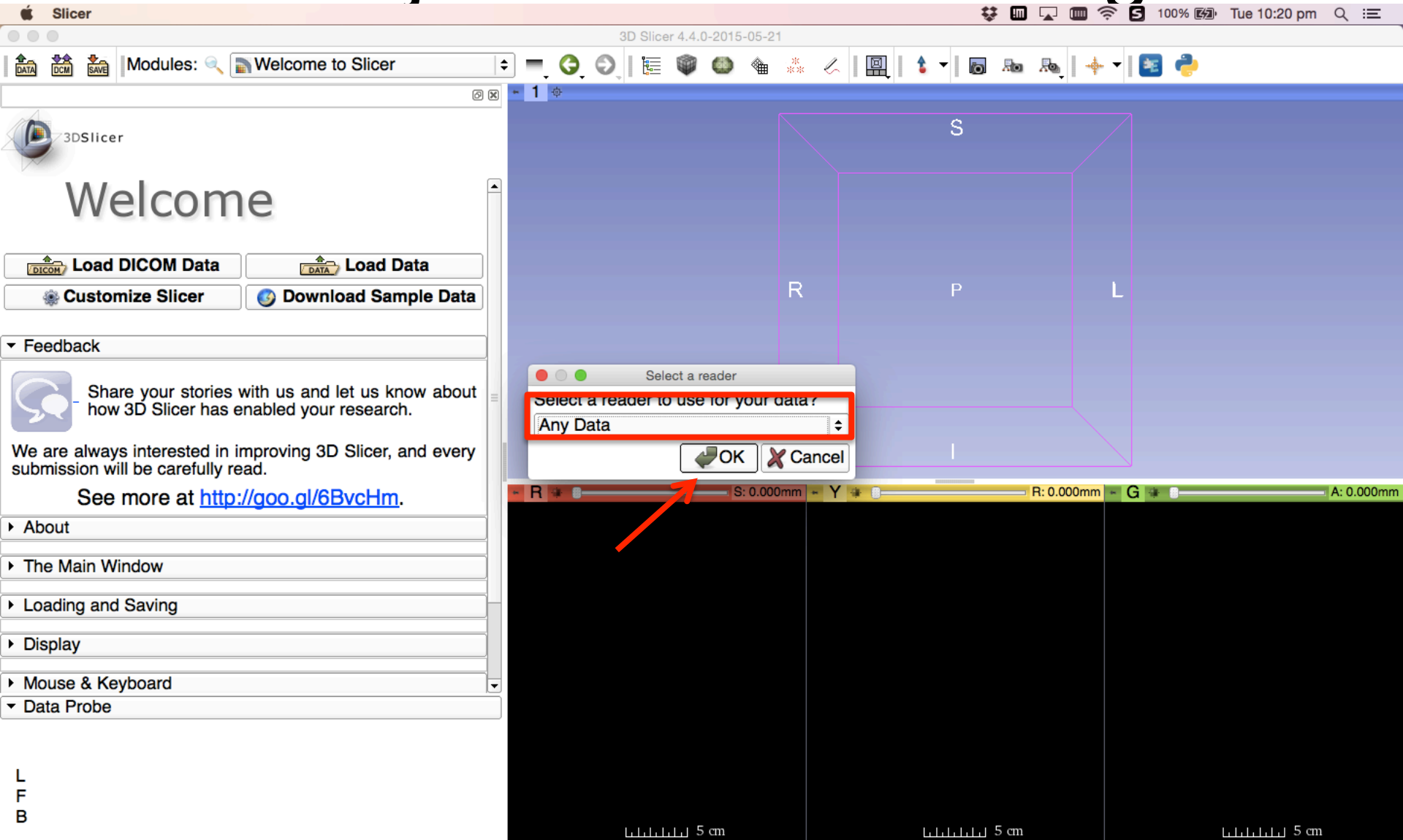
Subject B, T1 to Subject A, T1 registration

Image courtesy
of Dominik
Meier, Ph.D.

Subject A: Data loading



Subject A: Data loading



Subject A: Data loading

The screenshot shows the 3D Slicer 4.4.0-2015-05-21 interface. A dialog box titled "Add data into the scene" is open, displaying a table of files to be added. The table has two columns: "File" and "Description". Two files are listed, both checked for selection. A red arrow points to the "OK" button at the bottom right of the dialog box.

3D Slicer 4.4.0-2015-05-21

Modules: Welcome to Slicer

3DSlicer

Welcome

Load DICOM Data **Customize Slicer** **Down**

Feedback

Share your stories with us and how 3D Slicer has enabled you

We are always interested in improving 3D Slicer. Your submission will be carefully read.

See more at <http://goo.gl/6>

About

The Main Window

Loading and Saving

Display

Mouse & Keyboard

Data Probe

L
F
B

File	Description
<input checked="" type="checkbox"/> .../Desktop/registration/RegistrationData/SubjectA/SubjectA_T1.nrrd	Volume
<input checked="" type="checkbox"/> .../Desktop/registration/RegistrationData/SubjectA/SubjectA_T2.nrrd	Volume

Reset OK Cancel

0.000mm G A: 0.000mm

5 cm 5 cm 5 cm

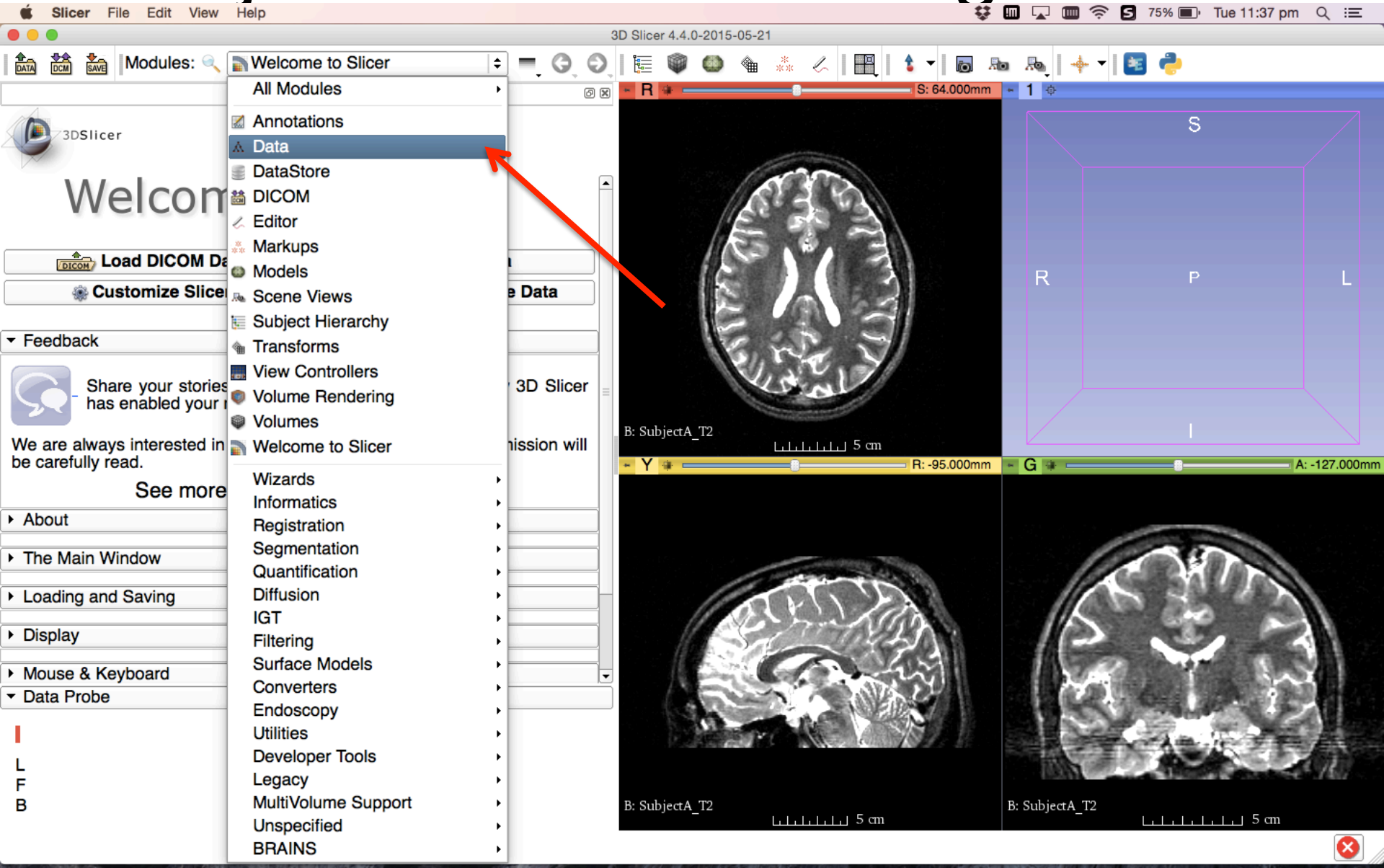
Subject A: Data loading

The screenshot shows the 3D Slicer 4.4.0-2015-05-21 application window. The top menu bar includes 'Slicer', 'File', 'Edit', 'View', and 'Help'. The title bar indicates the version and date. The main window is divided into several panels:

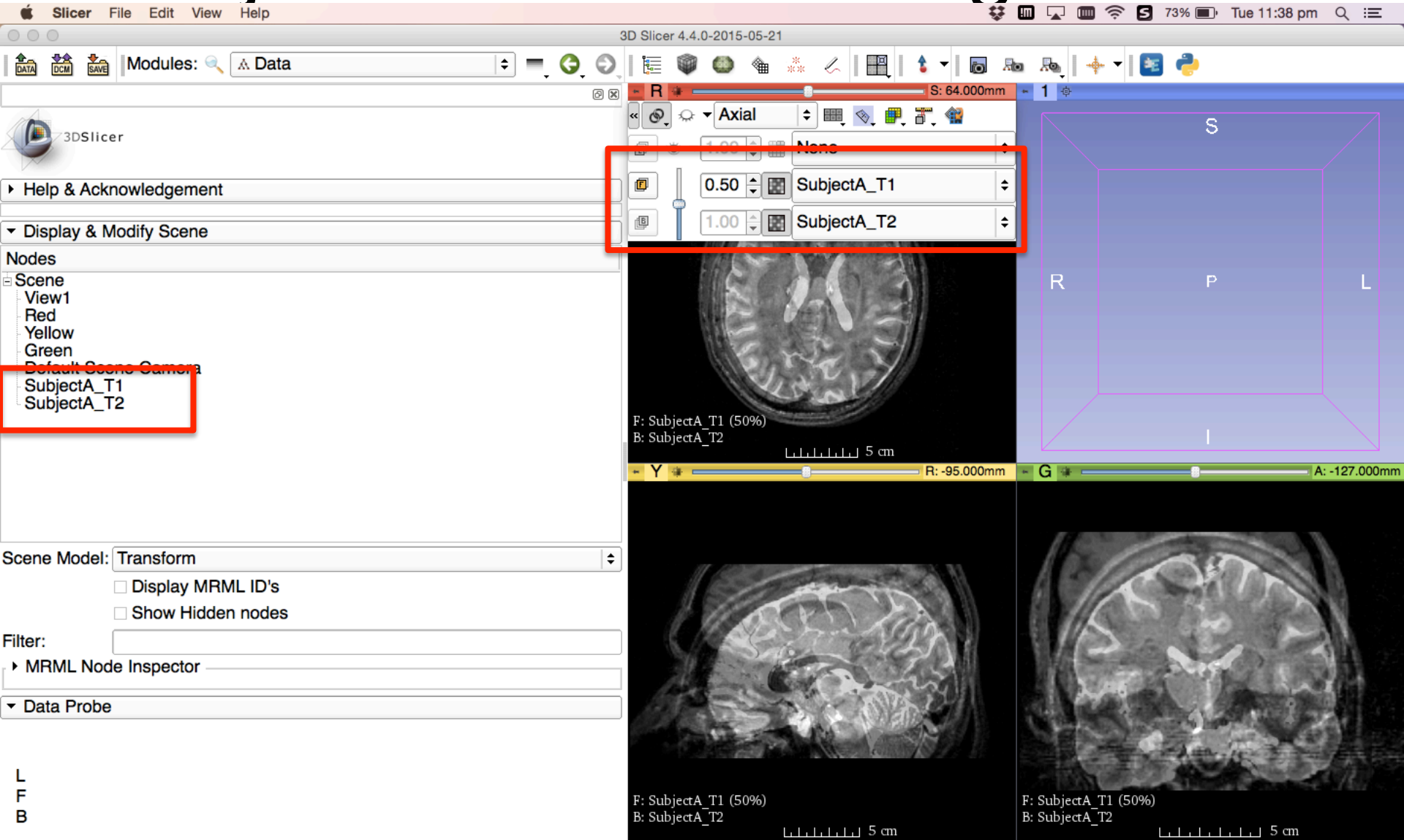
- Left Panel:** A 'Welcome' panel with buttons for 'Load DICOM Data', 'Load Data', 'Customize Slicer', and 'Download Sample Data'. Below this is a 'Feedback' section with a text input field and a 'Share your stories...' button. At the bottom of the left panel is a 'Data Probe' section with a list of items: 'About', 'The Main Window', 'Loading and Saving', 'Display', 'Mouse & Keyboard', and 'Data Probe'.
- Top Panel:** A toolbar with various icons for file operations, navigation, and display settings.
- Center Panel:** A 3D view of a brain slice. A red arrow points to the 'Four-Up' option in the 'View' menu. The slice is labeled 'R' for Right. Below the 3D view are three 2D viewports showing different slices of the brain, labeled 'B: SubjectA_T2'. Each viewport has a 5 cm scale bar.
- Right Panel:** A 'View' menu with the following options: 'Conventional', 'Conventional Widescreen', 'Conventional Quantitative', 'Four-Up' (highlighted), 'Four-Up Quantitative', 'Dual 3D', 'Triple 3D', '3D only', 'One-Up Quantitative', 'Red slice only', 'Yellow slice only', 'Green slice only', 'Tabbed 3D', 'Tabbed slice', 'Compare', 'Compare Widescreen', 'Compare Grid', 'Three over three', 'Three Over Three Quantitative', 'Four over four', 'Two over Two', 'Side by side', 'Four by three slice', 'Four by two slice', and 'Three by three slice'.



Subject A: Initial mis-registration



Subject A: Initial mis-registration



Subject A: Data registration

The screenshot displays the 3D Slicer 4.4.0-2015-05-21 interface. The top menu bar includes 'Slicer', 'File', 'Edit', 'View', and 'Help'. The toolbar shows various icons for data management and registration. The left sidebar contains the 'General Registration (BRAINS)' module, with the following parameters highlighted in red:

- Parameter set: General Registration (BRAINS)
- Input Images:
 - Fixed Image Volume: SubjectA_T1
 - Moving Image Volume: SubjectA_T2
 - Percentage Of Samples: 0.002
 - B-Spline Grid Size: 14,10,12
- Output Settings (At least one output must be specified):
 - Slicer Linear Transform: Xf0_SubjectA_T2_to_T1
 - Slicer B-Spline Transform: None
 - Output Image Volume: None
- Transform Initialization Settings:
 - Initialization transform: None
 - Initialize Transform Mode: Off

The main view area shows three MRI slices: an axial slice at the top, a sagittal slice at the bottom left, and a coronal slice at the bottom right. Each slice is labeled 'F: SubjectA_T1 (50%)' and 'B: SubjectA_T2'. A 5 cm scale bar is present in each slice. The top right of the main view shows a coordinate system with axes labeled R (Right), L (Left), P (Posterior), and S (Superior). The status bar at the bottom indicates 'Status: Idle' and includes 'Restore Defaults', 'AutoRun', 'Cancel', and 'Apply' buttons.

Subject A: Data registration

3D Slicer 4.4.0-2015-05-21

Modules: General Registration (BRAINS)

3DSlicer

Help & Acknowledgement

Transform Initialization Settings

Initialization transform: None

Initialize Transform Mode:

- Off
- useMomentsAlign
- useCenterOfHeadAlign
- useGeometryAlign
- useCenterOfROIAlign

Registration Phases (Check one or more, executed in order listed)

- Rigid (6 DOF)
- Rigid+Scale(7 DOF)
- Rigid+Scale+Skew(10 DOF)
- Affine(12 DOF)
- BSpline (>27 DOF)
- SyN
- Composite (many DOF)

Image Mask and Pre-Processing

Advanced Output Settings

Status: Idle

Restore Defaults AutoRun

Cancel Apply

Set Initialization mode to UseCenterOfHeadAlign

Set Registration Phases to Rigid and Affine

L
F
B

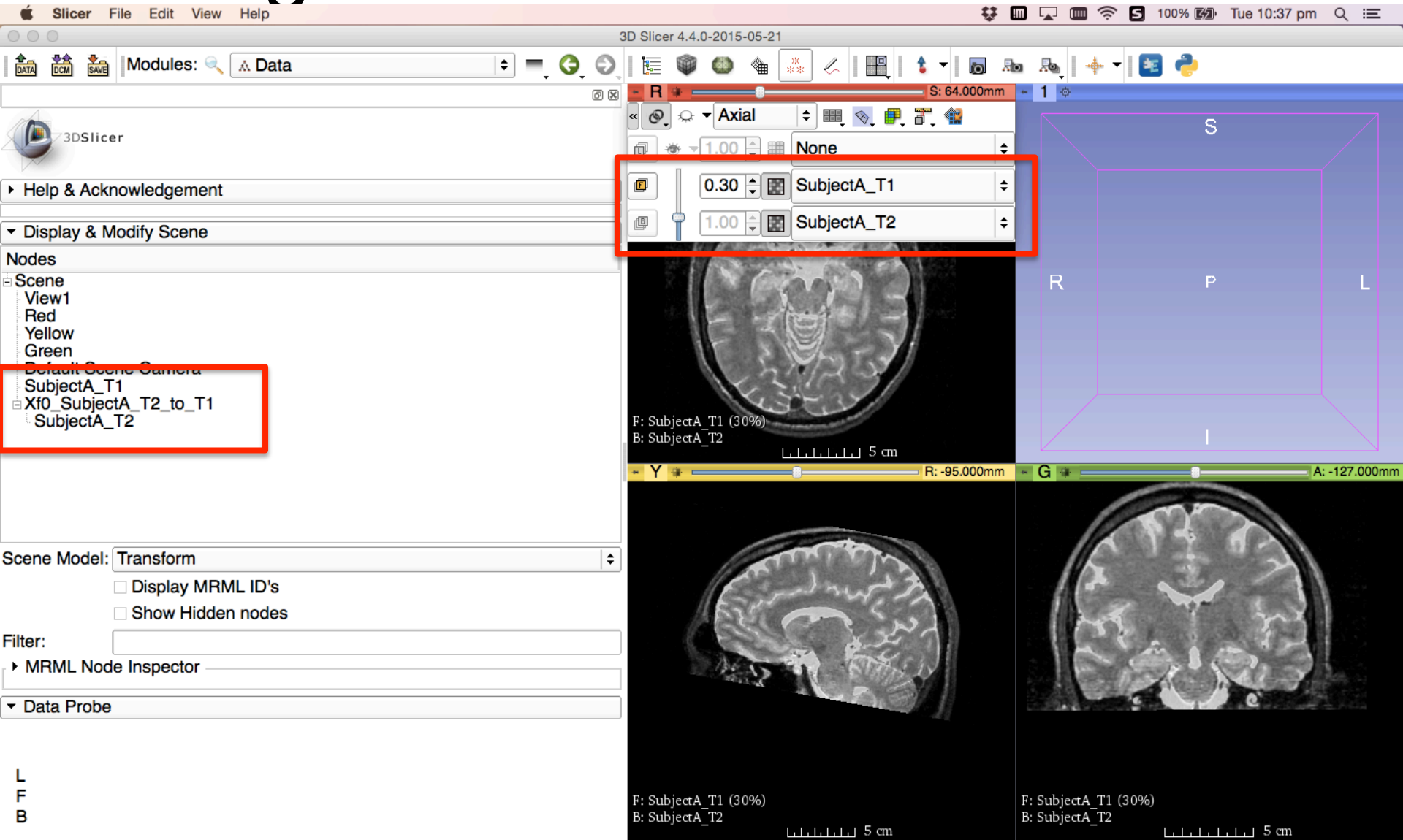
F: SubjectA_T1 (50%)
B: SubjectA_T2

5 cm

Subject A: Data registration

The screenshot displays the 3D Slicer 4.4.0-2015-05-21 interface. The top menu bar includes 'Slicer', 'File', 'Edit', 'View', and 'Help'. The toolbar contains various icons for data management and visualization. The left sidebar is divided into two main sections: 'Modules' and 'Registration Phases (Check)'. The 'Modules' section is expanded to show a list of modules, with 'Data' highlighted by a red arrow. The 'Registration Phases' section lists various registration methods such as 'Rigid (6 DOF)', 'Affine (12 DOF)', and 'BSpline (>27 DOF)'. The main 3D view area shows three orthogonal slices of a brain MRI scan. The top slice is an axial view, the bottom-left is a sagittal view, and the bottom-right is a coronal view. A coordinate system is overlaid on the axial slice, with axes labeled 'S' (Superior), 'I' (Inferior), 'R' (Right), and 'L' (Left). The software title bar indicates the date and time: 'Tue 10:35 pm'.

Rigid Affine Transformation



Subject B: Data Loading

The screenshot displays the 3D Slicer software interface. At the top, the menu bar includes 'Finder', 'File', 'Edit', 'View', 'Go', 'Window', and 'Help'. The title bar indicates '3D Slicer 4.4.0-2015-05-21'. The main window is divided into several panels:

- Left Panel:** Contains a sidebar with 'Modules' (Data, DCM, SAVE) and a 'Nodes' list. The 'Nodes' list includes 'Scene', 'View1', 'Red', 'Yellow', 'Green', 'Default Scene Camera', 'SubjectA_T1', and 'Xf0_SubjectA_T2_to_T1_SubjectA_T2'. Below this is the 'Scene Model: Transform' section with checkboxes for 'Display M' and 'Show Hic'. At the bottom left is the 'Data Probe' section.
- Center Panel:** Shows a 3D view of a brain scan in a coronal plane. A purple bounding box is overlaid on the scan, with labels 'R', 'S', 'P', and 'L' indicating directions. The status bar below the 3D view shows 'S: 64.000mm' and '1'.
- Right Panel:** Shows a 2D view of the same brain scan, with a purple bounding box and labels 'R', 'S', 'P', and 'L'. The status bar below this view shows 'A: -127.000mm'.
- Bottom Panel:** Shows the status bar with 'F: SubjectA_T1 (30%)' and 'B: SubjectA_T2'. A scale bar indicates '5 cm'.

A file browser window is open in the foreground, showing the file system structure for 'SubjectB'. A red arrow points to the 'SubjectB' folder. The file browser shows a hierarchy: 'SubjectB' > 'SubjectA' > 'SubjectB'. The files listed are 'SubjectB_T1.nrrd' and 'SubjectB_T2.nrrd'.

Subject B: Data Loading

The screenshot displays the 3D Slicer 4.4.0-2015-05-21 interface. The main window shows a multi-view MRI scan of Subject B. The top-left panel contains the 'Modules' menu with 'Data' selected. The left sidebar shows the 'Nodes' list with 'SubjectA_T1' and 'Xf0_SubjectA_T2_to_T1' (containing 'SubjectA_T2') expanded. The bottom-left panel shows the 'Scene Model' set to 'Transform' with options for 'Display MRML ID's' and 'Show Hidden nodes'. The bottom-right panel shows the 'Data Probe' section. The main view area is divided into four quadrants: a top-left axial view, a top-right sagittal view, a bottom-left coronal view, and a bottom-right axial view. A purple wireframe box in the top-right view is labeled with 'S' (Superior), 'R' (Right), 'P' (Posterior), and 'L' (Left). A red-bordered dialog box titled 'Select a reader' is overlaid on the top-left view, containing the text 'Select a reader to use for your data?' and a dropdown menu with 'Any Data' selected. The dialog has 'OK' and 'Cancel' buttons. A red arrow points from the 'OK' button to the 'Data' module in the top-left panel. The status bar at the bottom shows 'F: SubjectA_T1 (30%)' and 'B: SubjectA_T2' for the left view, and 'F: SubjectA_T1 (30%)' and 'B: SubjectA_T2' for the right view. The system tray at the top right shows the time as 'Tue 10:38 pm' and battery at 100%.

Subject B: Data Loading

3D Slicer 4.4.0-2015-05-21

Modules: Data

3DSlicer

Help & Acknowledgement

Display & Modify Scene

Nodes

- Scene
 - View1
 - Red
 - Yellow
 - Green
 - Default Scene Camera
 - SubjectA_T1
 - Xf0_SubjectA_T2_to_T1
 - SubjectA_T2

Scene Model: Transform

- Display MRML ID's
- Show Hidden nodes

Filter:

MRML Node Inspector

Data Probe

Red RAS: (-32.5, -188.9, 64.0) Axial Sp: 1.2

L None

F SubjectA_T1 (32, 189, 64) 42

B SubjectA_T2 (40, 194, 38) 267

Add data into the scene

Show Options

File	Description
<input checked="" type="checkbox"/> .../Desktop/registration/RegistrationData/SubjectB/SubjectB_T1.nrrd	Volume
<input checked="" type="checkbox"/> .../Desktop/registration/RegistrationData/SubjectB/SubjectB_T2.nrrd	Volume

Reset OK Cancel

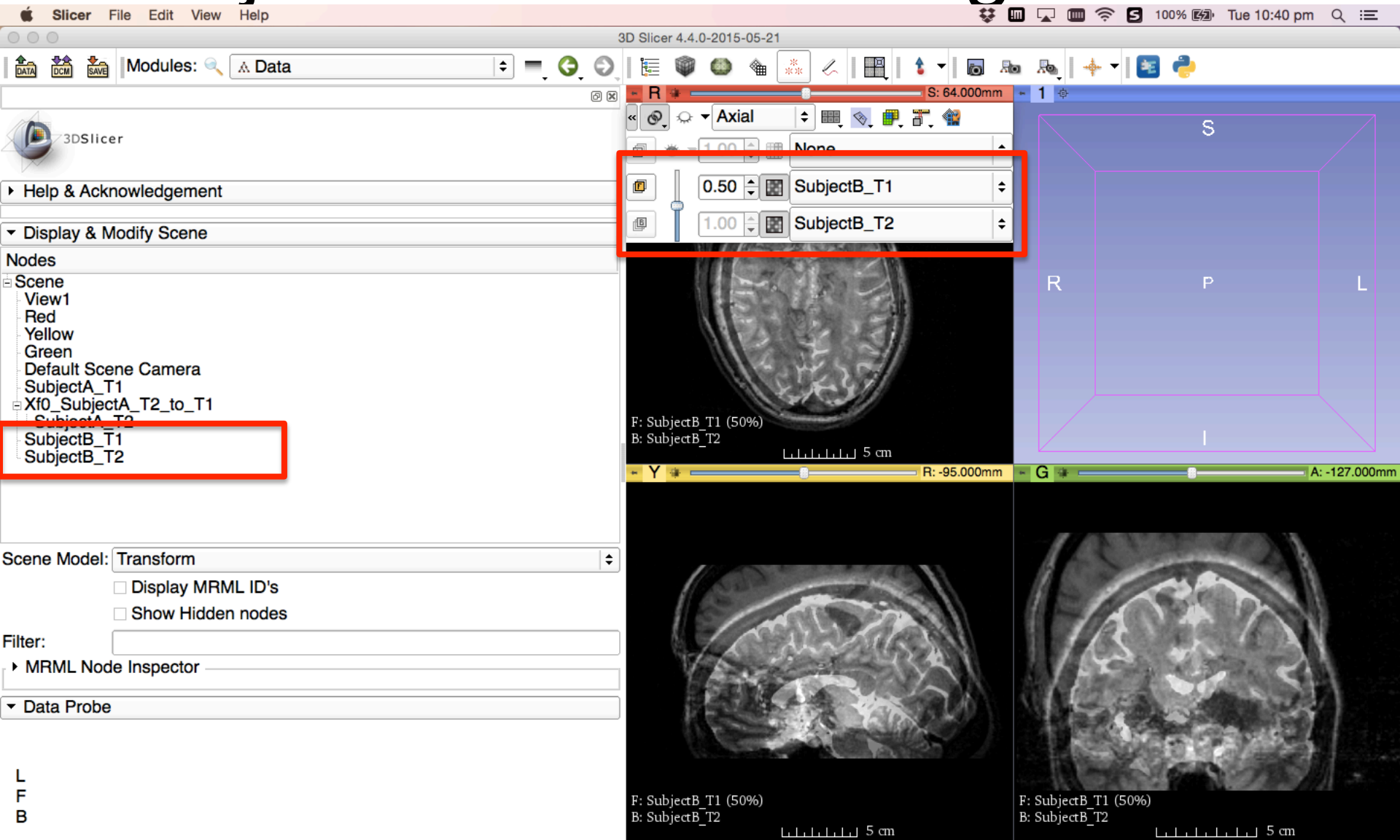
F: SubjectA_T1 (30%)
B: SubjectA_T2

5 cm

F: SubjectA_T1 (30%)
B: SubjectA_T2

5 cm

Subject B: Initial mis-registration



Subject B: Data Registration

The screenshot displays the 3D Slicer 4.4.0-2015-05-21 interface. The top menu bar includes 'Slicer', 'File', 'Edit', 'View', and 'Help'. The main window is divided into a left sidebar, a top toolbar, and a central 3x3 grid of image views.

Left Sidebar (General Registration (BRAINS) module):

- Parameter set: General Registration (BRAINS)
- Input Images:**
 - Fixed Image Volume: SubjectB_T1
 - Moving Image Volume: SubjectB_T2
 - Percentage Of Samples: 0.002
 - B-Spline Grid Size: 14,10,12
- Output Settings (At least one output must be specified):**
 - Slicer Linear Transform: Xf1_SubjectB_T2_to_T1
 - Slicer BSpline Transform: None
 - Output Image Volume: None
- Transform Initialization Settings:**
 - Initialization transform: None
 - Initialize Transform Mode: Off
- Status: Completed 100%
- Buttons: Restore Defaults, AutoRun, Cancel, Apply
- Data Probe

3x3 Grid of Image Views:

- Top-Left View:** Axial MRI slice of the brain. Labels: F: SubjectB_T1 (30%), B: SubjectB_T2. Scale bar: 5 cm.
- Top-Right View:** A blue wireframe box representing the registration grid. Labels: S (Superior), R (Right), P (Posterior), L (Left), I (Inferior).
- Bottom-Left View:** Sagittal MRI slice of the brain. Labels: F: SubjectB_T1 (30%), B: SubjectB_T2. Scale bar: 5 cm.
- Bottom-Right View:** Coronal MRI slice of the brain. Labels: F: SubjectB_T1 (30%), B: SubjectB_T2. Scale bar: 5 cm.

Bottom Left Corner: A small legend with the letters L, F, and B stacked vertically.

Subject B: Data Registration

3D Slicer 4.4.0-2015-05-21

Modules: General Registration (BRAINS)

3DSlicer

Help & Acknowledgement

Transform Initialization Settings

Initialization transform: None

Initialize Transform Mode

- Off
- useMomentsAlign
- useCenterOfHeadAlign
- useGeometryAlign
- useCenterOfROIAlign

Registration Phases (Check one or more, executed in order listed)

- Rigid (6 DOF)
- Rigid+Scale(7 DOF)
- Rigid+Scale+Skew(10 DOF)
- Affine(12 DOF)
- BSpline (>27 DOF)
- SyN
- Composite (many DOF)

Image Mask and Pre-Processing

Status: Completed 100%

Restore Defaults AutoRun

Cancel Apply

Data Probe

L
F
B

F: SubjectB_T1 (30%)
B: SubjectB_T2

5 cm

S
R
P
L

127.000mm

5 cm

Subject B: Data Registration

The screenshot displays the 3D Slicer 4.4.0-2015-05-21 interface. The top menu bar includes 'Slicer', 'File', 'Edit', 'View', and 'Help'. The title bar shows system information: 'Tue 11:03 pm' and '100%' battery. The 'Modules' panel on the left is set to 'General Registration (BRAINS)'. A red arrow points to the 'Data' menu item in the 'All Modules' list. The main view area shows three MRI slices: an axial slice (top), a sagittal slice (bottom left), and a coronal slice (bottom right). A purple wireframe box is overlaid on the coronal slice, labeled with 'S' (Superior), 'I' (Inferior), 'R' (Right), and 'L' (Left). The software title bar shows 'Slicer' and system information like 'Tue 11:03 pm'.

General Registration (BRAINS) Modules:

- All Modules
- Annotations
- Data (highlighted with red arrow)
- DataStore
- DICOM
- Editor
- Markups
- Models
- Scene Views
- Subject Hierarchy
- Transforms
- View Controllers
- Volume Rendering
- Volumes
- Welcome to Slicer
- Wizards
- Informatics
- Registration
- Segmentation
- Quantification
- Diffusion
- IGT
- Filtering
- Surface Models
- Converters
- Endoscopy
- Utilities
- Developer Tools
- Legacy
- MultiVolume Support
- Unspecified
- BRAINS

Registration Phases (Checked):

- Rigid (6 DOF)
- Rigid+Scale(7 DOF)
- Rigid+Scale+Skew(10 DOF)
- Affine(12 DOF)
- BSpline (>27 DOF)
- SyN
- Composite (many DOF)

Registration Parameters:

- S: 64.000mm
- R: -95.000mm
- A: -127.000mm

Subject B: Data Registration

Subject B: Data Registration

3D Slicer 4.4.0-2015-05-21

Modules: Data

Nodes

- Scene
- View1
- Red
- Yellow
- Green
- Default Scene Camera
- SubjectA_T1
- Xf0_SubjectA_T2_to_T1
- SubjectA_T2
- SubjectB_T1
- Xf1_SubjectB_T2_to_T1
- SubjectB_T2

Scene Model: Transform

- Display MRML ID's
- Show Hidden nodes

Filter:

MRML Node Inspector

Data Probe

Registration Sliders:

- SubjectB_T1: 0.50
- SubjectB_T2: 1.00

3D View:

- Axial: F: SubjectB_T1 (50%), B: SubjectB_T2
- Sagittal: F: SubjectB_T1 (50%), B: SubjectB_T2
- Coronal: F: SubjectB_T1 (50%), B: SubjectB_T2

Scale: 5 cm

Top Bar: S: 64.000mm, 1

Bottom Left: L, F, B

Co-registration of Subject B to Subject A

The screenshot displays the 3D Slicer 4.4.0-2015-05-21 interface. The top menu bar includes 'Slicer', 'File', 'Edit', 'View', and 'Help'. The status bar at the top right shows '100%' zoom and 'Tue 11:05 pm'. The left sidebar contains the 'Modules' panel, 'Data' panel, and 'Nodes' panel. The 'Nodes' panel shows a hierarchy of subjects and volumes, with 'SubjectB_T2' selected. The 'Data' panel lists various modules, with 'Registration' highlighted. A red arrow points to the 'General Registration (BRAINS)' option in the 'Registration' submenu. The main view area is divided into four quadrants: top-left shows an axial brain slice of SubjectB_T1 (50%) with a 5 cm scale bar; top-right shows a blue wireframe bounding box with axes labeled S (Superior), R (Right), P (Posterior), L (Left), and I (Inferior); bottom-left shows a sagittal brain slice of SubjectB_T1 (50%) with a 5 cm scale bar; bottom-right shows a coronal brain slice of SubjectB_T1 (50%) with a 5 cm scale bar. The bottom status bar shows coordinates: 'R: -95.000mm', 'A: -127.000mm', and 'S: 64.000mm'.

3D Slicer 4.4.0-2015-05-21

Modules: Data

All Modules

- Annotations
- Data
- DataStore
- DICOM
- Editor
- Markups
- Models
- Scene Views
- Subject Hierarchy
- Transforms
- View Controllers
- Volume Rendering
- Volumes
- Welcome to Slicer

Wizards

Informatics

Registration

- General Registration (BRAINS)**
- Landmark Registration
- Metric Test
- Resample Image (BRAINS)
- Resize Image (BRAINS)
- Transforms
- Specialized

Segmentation

Quantification

Diffusion

IGT

Filtering

Surface Models

Converters

Endoscopy

Utilities

Developer Tools

Legacy

MultiVolume Support

Unspecified

BRAINS

Scene Model: Transform

Display MRN

Show Hidden

Filter:

MRML Node Inspector

Data Probe

SubjectB_T1 (50%)

SubjectB_T2

5 cm

S: 64.000mm

R: -95.000mm

A: -127.000mm

S

R

P

L

I

SubjectB_T1 (50%)

SubjectB_T2

5 cm

SubjectB_T1 (50%)

SubjectB_T2

5 cm

SubjectB_T1 (50%)

SubjectB_T2

5 cm

Non rigid registration of Subject B to Subject A

The screenshot displays the 3D Slicer interface for non-rigid registration. The left sidebar shows the 'General Registration (BRAINS)' module with the following settings:

- Parameter set: General Registration (BRAINS)
- Input Images:
 - Fixed Image Volume: SubjectA_T1
 - Moving Image Volume: SubjectB_T1
 - Percentage Of Samples: 0.2
 - B-Spline Grid Size: 3,3,3
- Output Settings (At least one output must be specified):
 - Slicer Linear Transform: None
 - Slicer BSpline Transform: Xf2_SubjectB_T1_to_SubjectA_T1
 - Output Image Volume: SubjectB_T1_Xf2_transformed
- Transform Initialization Settings:
 - Initialization transform: None
 - Initialize Transform Mode: Off

The status bar indicates 'Status: Completed' with a 100% progress bar. The main view shows a 2x2 grid of MRI slices. The top-left slice is an axial view of the brain. The top-right slice is a sagittal view with a purple bounding box and labels 'S', 'R', 'P', 'L'. The bottom-left slice is a coronal view. The bottom-right slice is another coronal view. A yellow text box is overlaid on the top-right slice with the following text:

Set the Percentage of Samples to 0.2
Set the B-Spline Grid size to 3,3,3

At the bottom left, there are labels 'L', 'F', 'B' and a scale bar of 5 cm. At the bottom right, there are labels 'F: SubjectB_T1 (50%)', 'B: SubjectB_T2' and a scale bar of 5 cm.

Non rigid registration of Subject B to Subject A

The screenshot displays the 3D Slicer 4.4.0-2015-05-21 interface. The 'General Registration (BRAINS)' module is active. The 'Transform Initialization Settings' panel is highlighted with a red border and contains the following configuration:

- Initialization transform: None
- Initialize Transform Mode: Off
 - useMomentsAlign
 - useCenterOfHeadAlign
 - useGeometryAlign
 - useCenterOfROIAlign
- Registration Phases (Check one or more, executed in order listed):
 - Rigid (6 DOF)
 - Rigid+Scale(7 DOF)
 - Rigid+Scale+Skew(10 DOF)
 - Affine(12 DOF)
 - BSpline (>27 DOF)
 - SyN
 - Composite (many DOF)

The 'Image Mask and Pre-Processing' section shows a progress bar at 100% completion. The 'Apply' button is highlighted with a red arrow. The main view shows a 3D rendering of a brain slice with a yellow overlay and a 2D view of the same slice with a purple bounding box. The 2D view is labeled with 'S', 'R', 'P', and 'L' axes. The 3D view is labeled with 'Y', 'R', 'G', and 'A' axes. The status bar at the bottom indicates 'F: SubjectB_T1 (50%)' and 'B: SubjectB_T2'.

Set Initialization mode Off

Set Registration Phases to BSpline

Co-registration of Subject B to Subject A

3D Slicer 4.4.0-2015-05-21

Modules: Data

Nodes

- Scene
 - View1
 - Red
 - Yellow
 - Green
 - Default Scene Camera
 - SubjectA_T1
 - Xf0_SubjectA_T2_to_T1
 - SubjectA_T2
 - Xf1_SubjectB_T2_to_T1
 - SubjectB_T2
 - Xf2_SubjectB_T1_to_SubjectA_T1
 - SubjectB_T1
 - SubjectB_T1_Xf2_transformed

Scene Model: Transform

- Display MRML ID's
- Show Hidden nodes

Filter:

MRML Node Inspector

Data Probe

None

0.50 SubjectA_T1

1.00 SubjectB_T1_Xf2_transformed

S: 88.000mm 1

Axial

R P L

S

F: SubjectA_T1 (50%)
B: SubjectB_...ansformed

5 cm

Y R: -87.000mm G A: -127.000mm

F: SubjectA_T1 (50%)
B: SubjectB_...ansformed

5 cm

F: SubjectA_T1 (50%)
B: SubjectB_...ansformed

5 cm

L
F
B

Visualizing the transform

The image shows the 3D Slicer software interface. The top toolbar includes icons for Data, DCM, Save, and the Transforms module. The Transforms module panel on the left shows the active transform as 'Xf2_SubjectB_T1_to_SubjectA_T1'. Under the 'Display' tab, the 'Visible in 3D view' checkbox is checked, and the 'Region' is set to 'SubjectB_T1_..._transformed'. The 'Glyph' button is selected. The main 3D view shows a brain slice with a yellow bounding box around it. The bounding box is labeled with 'S' at the top, 'R' on the left, 'P' in the middle, and 'L' on the right. The right side of the interface shows three orthogonal views: a top view (S: 88.000mm), a side view (R: -87.000mm), and a front view (A: -127.000mm). The bottom left corner has the letters 'L', 'F', and 'B' stacked vertically. A red 'X' icon is in the bottom right corner.

3D Slicer 4.4.0-2015-05-21

Modules: Transforms

Active Transform: Xf2_SubjectB_T1_to_SubjectA_T1

Information

Edit

Identity Invert

Display

Visible in slice view:

Visible in 3D view: Region: SubjectB_T1_..._transformed

Glyph Grid Contour

Colors

Advanced

Apply transform

Data Probe

L
F
B

S
R
P
L

S: 88.000mm

R: -87.000mm

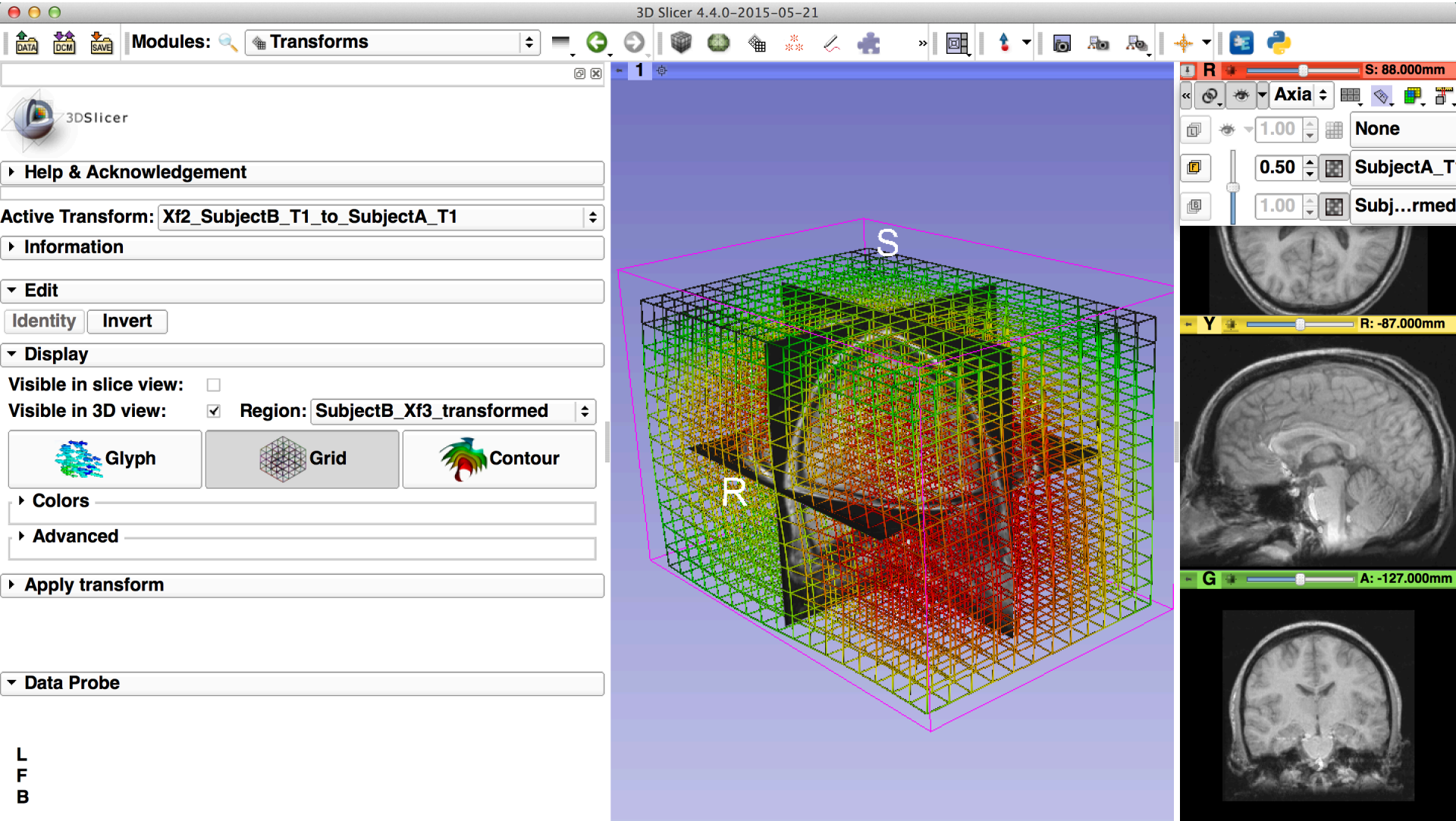
A: -127.000mm

Select the module
Transforms

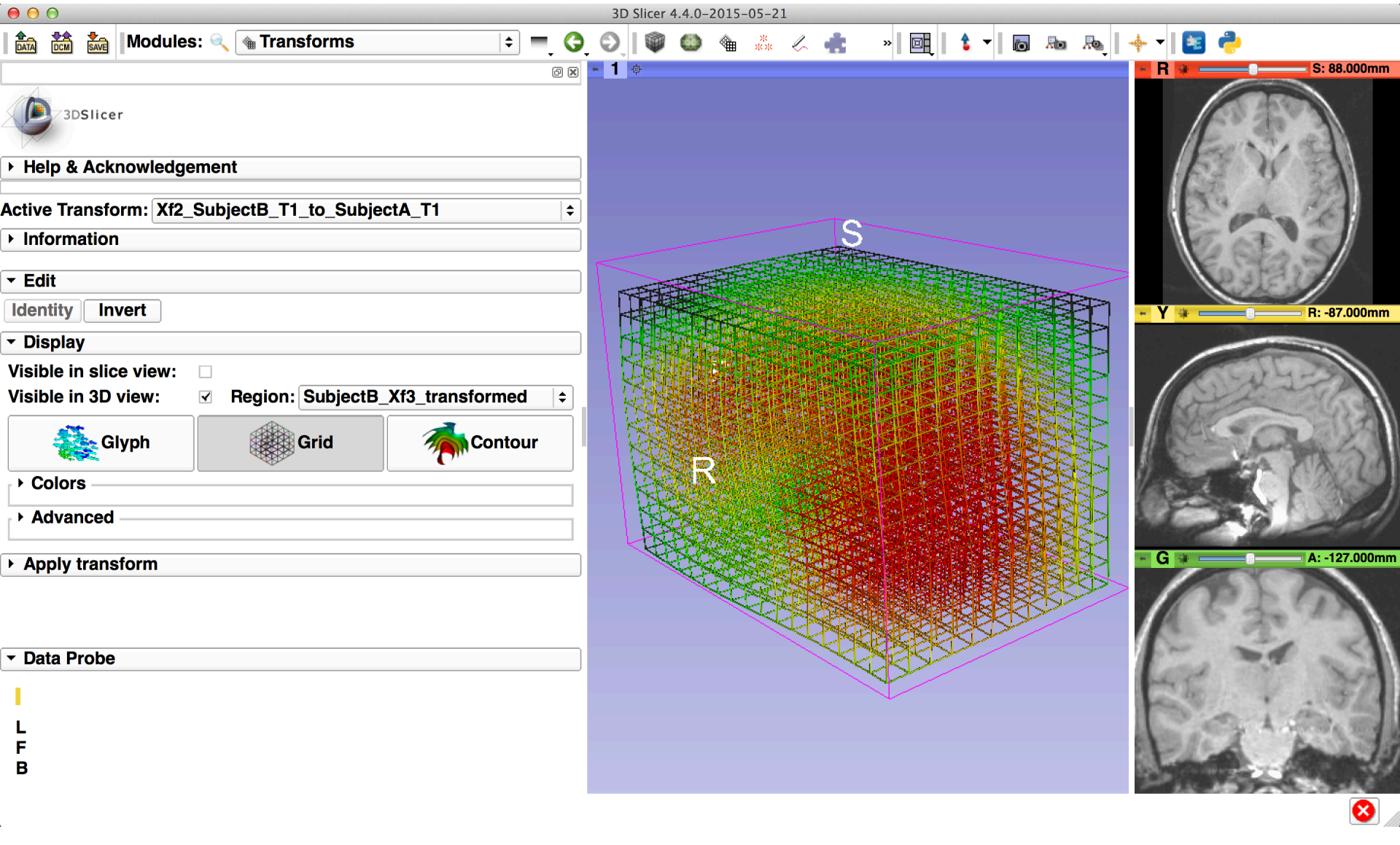
Click on the **Display** tab and
select **Visible in 3D view**

Select the Region
SubjectB_T1_Xf3_transformed

Visualizing the transform



Visualizing the transform



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