Introduction to

Imaris

Imaris x64 9.0.2 [Oct 10 2017] Build 44695 for x64 Copyright © 1993-2017 Bitplane AG

www.imaris.com welcome@imaris.com





7th November 2017

Course Schedule

09:30-10:30 Session 1 – Understanding the Basics

10:45-12:30 Session 2 – Initial Scene Objects, Taking Snapshots and Making Movies

13:30-15:00 Session 3 – Creating Spots and Surfaces, Annotation

15:30-17:00 Session 4 – Creating Cells

Session 2 – Initial Scene Objects

1. Scene

2. Frame

3. Light Source

4. Volume





These are the initial Objects that will appear in a scene. All ticked items will be displayed

- Scene is the top level that contains everything else
- Light Source shows the direction of the illuminating light and will only be relevant for certain render options
- Frame is the box displayed around the image volume
- Volume is the image data

Left-click any Object to select. Only properties of the selected object will be shown.





Most settings are self-explanatory, changing the appearance of the frame or turning features of the frame on and off



 ✓ È Scene ✓ Light Source 1 ✓ Frame 	Frame Settings
🗹 🦉 Volume	
	E Settings October Erame Settings
	⊡ Box
	Lines Width 🔵
	☐ Shading ☐ Shadow
	Grid and Tickmarks Settings
🗐 Settings 🍚 Color	FZ Grid
Box Lines Width Shading	⊡ Gild ⊡ Tickmarks Spacing
Grid and Tickmarks Settings	Position X/Y/Z 🔻 5 ur
☑ Grid	Labels Settings
Position X/Y/Z 🔻 5 um 🔺	Axis Labels Fo
Labels Settings	Decorations Settings
Decorations Settings	
Fix Decorations to Data Set	Fix Decorations to Data

5 um

Data Set

Most settings are self-explanatory, changing the appearance of the frame or turning features of the frame on and off

Fix Decorations will stick labels to the axis rather than dynamically shifting them during e.g. rotation

 ✓ Scene ✓ ¥ Light Source 1 ✓ Frame ✓ Volume 	Frame Settings
	 Settings Color Frame Settings Box Lines Width Shading
	Grid and Tickmarks Settings
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☐ Shadow Grid and Tickmarks Settings ☑ Grid ☑ Tickmarks	Position X/Y/Z = 5 um
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Axis Labels Font Color Color Color Fix Decorations to Data Set	Decorations Settings

Most settings are self-explanatory, changing the appearance of the frame or turning features of the frame on and off

Fix Decorations will stick labels to the axis rather than dynamically shifting them during e.g. rotation

Checking the Shading and Shadow option can introduce a new perspective to the view. Light Source is now relevant.







Left click and drag the cone to move the position of the light source

Left click and move the cylinder to adjust the height of the light source (it won't do much in the current view)



Volume Settings

Settings tab most relevant Draw and Stats rarely, if ever used





Volume Settings

Maximum Intensity Projection (MIP)



Only the brightest point along the viewing direction is displayed



Volume Settings



Adjust Opacity to make object look more or less solid

Volume Settings



Adjust Opacity to make object look more or less solid

Adjust Min/Max to change working range of grey levels

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Adjust Opacity to make object look more or less solid

Adjust Min/Max to change working range of grey levels

Use Display Adjustment to change brightness & contrast

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Volume Settings

Blend



- All values along the viewing direction are used
- Depth effect, edges appear dark
- Data closest to the viewer are visible
- Data further away obscured

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Volume Settings

Normal Shading

📋 Scene

Mode

Normal Shading

Rendering Quality:

Blend Mode

0

Opacity:

▼ 0.79

🗹 🔆 Light Source 1

O Blend

O Shadow Projection

""The state

▲ Max: ▼ 548.14

220

TRITC

Auto Adjust all Channels



- Uses artificial light source
- Surfaces turned away from light source appear darker
- Depth effect
- Light source active

Volume Settings

Shadow Projection



Scene



- Uses artificial light source
- An object between the light source and the object projects a shadow onto the object
- Difficult to predict result
- Very slow, therefore not an interactive mode!

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Session 2 – Taking Snapshots, Making Movies



Taking Snapshots

Simply click on the Snapshot icon, or Ctrl+C

Arena Surpass Vantage	Store Store as Export	Slice JD View	Coloc Annotate	Animation Snapshot
Snapshot Snapshot Snapshot Ctrl+C Fixed Size Ctrl+Shift+C Y Preferences	Save Size: Window Fixed Width DPI: 300.00 Save as type: TIFF Image Copy to Clipboard Save to File Transparent Backgroun	▼ 1000 ▲ Height ▼ 1000 (*.tif) ▼		
	Image Output Directory O Source Image Directory O Always Prompt User O Custom: Open Output Directory	C:\Users\walkers\Desktop		Browse





Animation pane appears below View Area

ď	Key Frame Animation		
Key Frame	Rotations	Animation	Play Back Options
Add O Modify X Delete X Delete All	Custom 4 +360° Horizontal	100 Frames Settings	 ✓ Camera ✓ Time Points ✓ Clipping Planes
			 ✓ Orthogonal Slicers ✓ Oblique Slicers



്	Key Frame Animation		
Key Frame	Rotations	Animation	Play Back Options
Add O Modify X Delete X Delete All	Custom 4360° Horizontal	100 Frames Settings	 ✓ Camera ✓ Time Points ✓ Clipping Planes
			 ✓ Orthogonal Slicers ✓ Oblique Slicers

- Initial settings will create an animation of 100 frames
- Each frame is represented by a dark blue line on the horizontal strip

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Key Frame		Rotations		Animation	Play Back Options
Add	Modify	Custom		100 Frames	 ✓ Camera ✓ Time Points
					 Clipping Planes Orthogonal Slicers Oblique Slicers

- Initial settings will create an animation of 100 frames
- Each frame is represented by a dark blue line on the horizontal strip
- Animation requires input of Key Frames
- A Key Frame is a view of your data that you want to show in the movie
- Key frames are added by clicking + Add and removed using X Delete, or X Delete All...



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Key Frame	Rotations	Animation	Play Back Options
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🗙 Delete 🗶 Delete All 🚺 📕	🛶 +360° Horizontal 📼	Settings 🧶	 ✓ Time Points ✓ Clipping Planes
			 ✓ Orthogonal Slicers ✓ Oblique Slicers

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- Key Frames will be shown in light blue on the horizontal strip



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Key Frame	Rotations	Animation	Play Back Options
Add Modify	Custom +360° Horizontal	100 Frames Settings	 ✓ Camera ✓ Time Points
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- Key Frames will be shown in light blue on the horizontal strip
- The first key frame to be added will also be the last (ensures the movie ends where it starts)
- Imaris will interpolate between Key Frames to create the movie

3	Key Frame Animation		
Key Frame	Rotations	Animation	Play Back Options
Add O Modify	Custom	100 Frames 🕨	Camera
Delete X Delete All	u +360° Horizontal →	Settings 🧶	Clipping Planes
			 ✓ Orthogonal Slicers ✓ Oblique Slicers

- The white line indicates the current position in the movie sequence
- Left-click on the horizontal bar to move the current position



• Use the dropdown menu to create rotations using predefined Key Frames

ď	Key Frame Animation		
Key Frame	Rotations	Animation	Play Back Options
🕂 Add 💿 Modify	Custom	100 Frames	▶ 🗹 Camera
🗙 Delete 💥 Delete All 🚺 🖻	👙 +360° Horizontal 🔹	Settings	Image: Time Points ✓ Clipping Planes
			Orthogonal Slicers

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- The white line indicates the current position in the movie sequence
- Left-click on the horizontal bar to move the current position
- Use the dropdown menu to create rotations using predefined Key Frames
- Review your animation using the Play button

ď	Key Frame Animatio	n	
Key Frame	Rotations	Animation	Play Back Options
Add Modify X Delete X Delete All	Custom Custom ···	100 Frames Settings	 ▶ ☑ Camera ☑ Time Points ☑ Clipping Planes
		Key Frame Animation Play One Time Repeat Forever 	 ✓ Orthogonal Slicers ✓ Oblique Slicers

- The white line indicates the current position in the movie sequence
- Left-click on the horizontal bar to move the current position
- Use the dropdown menu to create rotations using predefined Key Frames
- Review your animation using the Play button
- Record your animation using the Record button (animation speed defined in Settings)
- Different file formats available, be aware of file size vs image quality



C	Key Frame Animation		
Key Frame	Rotations	Animation	Play Back Options
Add O Modify X Delete X Delete All	Custom Custom	100FramesSettings	 ✓ Camera ✓ Time Points ✓ Clipping Planes
			Orthogonal Slicers

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- Review your animation using the Play button
- Record your animation using the Record button (animation speed defined in Settings)
- Different file formats available, be aware of file size vs image quality
- Play Back Options determine what parameters are modified during Key Frame interpolation

Group Exercise 3

Make a nice movie!

Tips:

- Increasing the number of frames will make a smoother animation
- Don't go crazy zooming in and out, rotating too fast etc.
- Use 'Modify' to adjust your Key Frames

