

Multidimensional Images on Fiji

Setting-up Fiji

Install `fiji.sc`
Memory (80% of RAM)
Update (e.h IJPB-plugins)
Search bar
Benchmark (17.8)

Get information on images

Zoom, pixel values (decay)
Plot Profile, Surface Plot, Z Plot Profile (decay)
Image → Show Info, Properties (decay)
Image → Hyperstack → Stack to Hyperstack (mitosis)
Analyze → Histogram (create a noise image)

nD Visualization

Image → Stacks → Othoviews (escargot)
Image → Stacks → 3D Project
Image → Stacks → Z Project
Plugins → 3D Viewer
Plugins → Volume Viewer

Open and save images

File → Open Samples → mitosis
File → Import → Import Sequence (SPB)
Plugins → Bio-Formats → Importer (SPB)
File → Save

2D Visualization

Image → Adjust → B&C (hrct)
Process → Math → Gamma (hrct)
Image → LUT (hrct)

Handling multidimensional images

Image → Color → Split, Merge (SPB, delete slice)
Image → Color → Channel Tool
Image → Type → RGB
Image → Stack → Tools → Make Substack (decay)
Image → Stack → Reslice (decay)
Image → Adjust → Size (decay)
Process → Image Calculator ... (street, 32-bits)
Synchronize Windows (SPB)

Multidimensional Images on Napari

Installation of Napari

```
conda create -y -n napari-bii -c conda-forge python=3.10
conda activate napari-bii
python -m pip install "napari[all]"
napari
```

Installation of plugins

```
pip install napari-simpleitk-image-processing
pip install napari-math
```

Projection

Part of built-in napari > Right click on the layer

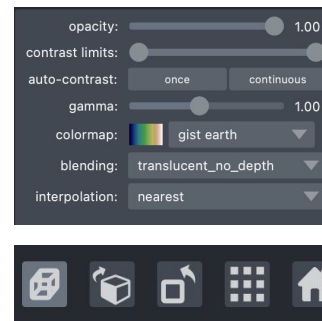
Math operations

Part of napari-math > Plugins > napari-math

Slicing

Part of napari-simpleitk > Tools > Utilities > Split Stack

Visualisation



Control the image as numpy array

```
import numpy as np
im = viewer.layers['mouse'].data
print(im.shape, np.mean(im))
(131, 400, 400) 146.0694417461832
frame = im[11, :, :]
viewer.add_image(frame)
```