

Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

This tutorial contains navigation buttons that enable you to move throughout the tutorial.

Please use the navigation buttons and not the page up/page down or arrow keys to navigate through the tutorials.

This is the 'Next' button. It takes you to the next frame or stop point.



This is the 'Previous' button. It takes you to the previous frame or stop point.



This is the 'Go to frame' button. It takes you to a specified frame.



This is the 'Go to URL' button. It takes you to a website link.



Press the 'Next' button below to start this tutorial.



Data Selection Panel

Name of Image Matrix:



Name of Variable Matrix:

This tutorial will cover how to normalize an image.

NOTE: There is some discussion about whether or not you should normalize image data. In some cases, normalizing image data can help correct for topography differences and can provide a more "realistic" signal.

However, since the intensity per pixel is typically very low in ToF-SIMS images, normalization can also introduce artifacts into the data or accentuate noise.

As with any data pre-processing, one should always know why they are normalizing and make an educated decision about whether normalizing makes sense.

Data Selection Panel

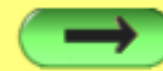
Name of Image Matrix

Name of Variable Matrix

imagedata_dan01

exactmass_dan01

First make sure the data you want to normalize is listed in the drop down menus.



- Import Data
- Normalize Data**
- Crop Image
- Filter Image

Data Selection Panel

Matrix

Name of Variable Matrix

imageuata_uano1

exactmass_dan01

From the data pre-processing menu choose:
Data Pre Processing -> Normalize Data

← →

Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata_dan01

exactmass_dan01

Image Normalization Panel

Load Selected Data

Image Matrix : None

Variable List : None

Name for normalized image :

Normalize by: Choose one...

Normalize

close

The Image Normalization Panel will appear.

← →

Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata_dan01

exactmass_dan01

Image Normalization Panel

Load Selected Data

Press the 'Load Selected Data' button to load the selected data into the panel.

Name for normalized image :

Normalize by:

Choose one...

Normalize

close

Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata_dan01

exactmass_dan01

Image Normalization Panel

Load Selected Data

Image Matrix : **imagedata_dan01**

Variable List : **exactmass_dan01**

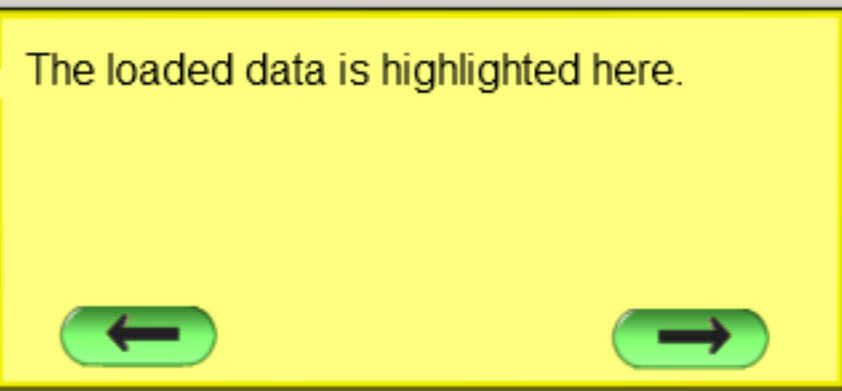
Name for normalized image :

Normalize by:

Normalize

close

The loaded data is highlighted here.



Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata_dan01

exactmass_dan01

Image Normalization Panel

Load Selected Data

Image Matrix : **imagedata_dan01**

Variable List : **exactmass_dan01**

Name for normalized image :

ndata

Normalize by:

Choose one...

Normalize

close

Type the name you want to call the normalized data here.



Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata_dan01

exactmass_dan01

Image Normalization Panel

Load Selected Data

Image Matrix : **imagedata_dan01**

Variable List : **exactmass_dan01**

Name for normalized image :

ndatat

Normalize by:

- Choose one...
- Choose one...**
- A selected peak
- sumofselected_dan01
- totalcounts_dan01

Normalize

Choose a normalization option. You can normalize to a selected peak, to the sum of selected peaks, or to the total counts.

Normalization is done pixel by pixel.

The gui automatically populates the drop down menu with any image available for normalization. These must be an unfolded single image ($m \times 1$, where m = total number of pixels in unfolded image).

← →

Data Selection Panel

Name of Image Matrix: **imagedata_dan01**
Name of Variable Matrix: **exactmass_dan01**

Image Normalization Panel

Load Selected Data
Image Matrix : **imagedata_dan01**
Variable List : **exactmass_dan01**

Name for normalized image : **ndatat**

Normalize by: **totalcounts_dan01**

Here we will choose totalcounts.

← →

Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata_dan01

exactmass_dan01

Image Normalization Panel

Load Selected Data

Image Matrix : **imagedata_dan01**

Variable List : **exactmass_dan01**

Name for normalized image :

ndatat

Normalize by:

totalcounts_dan01

Normalize

Press the 'Normalize' button.



Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata_dan01

exactmass_dan01

Image Normalization Panel

Load Selected Data

Image Matrix : **imagedata_dan01**

Variable List : **exactmass_dan01**

Name for normalized image :

ndatat

Normalize by:

totalcounts_dan01

Normalize

close

Your data has been normalized.

When this message appears, the data normalization is complete and the new normalized matrix has been added to the Image Matrix drop down menu.



Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata_dan01

exactmass_dan01

- Select Data
- imagedata_dan01
- ndatat**

The new normalized matrix is appended to the end of the list.

Load Selected Data

Image
Variab



Name for normalized image :

ndatat

Normalize by:

totalcounts_dan01

Normalize

close

Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata_dan01

exactmass_dan01

Image Normalization Panel

Load Selected Data

Image Matrix : **imagedata_dan01**

Variable List : **exactmass_dan01**

Name for normalized image :

ndatat

Normalize by:

totalcounts_dan01

Normalize

close

Your data has been normalized.

Close the panel by pressing the 'Close' button.



Data Selection Panel

Name of Image Matrix

imagedata_dan01

Name of Variable Matrix

exactmass_dan01

That ends this tutorial. Press the button on the left to go back to the previous step. Press the button on the right to start the tutorial over.

