

ImageGenerateROIMask

You can combine multiple XYZ datasets in one matrix by calling ImageFromXYZ multiple times with different input data and the same *dataMatrix* and *countMatrix*. In this case you would clear *dataMatrix* and *countMatrix* before the first call to ImageFromXYZ only.

What you do with the output is up to you but one technique is to divide *dataMatrix* by *countMatrix* to get the average and then use **MatrixFilter** NanZapMedian to eliminate any NaN values that result from zero divided by zero.

Example

```
Make /N=1000 /O wx=enoise(2), wy= enoise(2), wz= exp(-(wx^2+wy^2))
Make /O /N=(100,100) dataMat=0
SetScale x,-2,2,dataMat
SetScale y,-2,2,dataMat
Duplicate /O dataMat,countMat
ImageFromXYZ /AS {wx,wy,wz}, dataMat, countMat

// Execute these one at a time
NewImage dataMat
dataMat /= countMat // Replace cumulative z value with average
MatrixFilter NanZapMedian, dataMat // Apply median filter, zapping NaNs
```

See Also

SetScale, Image X and Y Coordinates on page II-388.

ImageGenerateROIMask

ImageGenerateROIMask [/W=*winName*/E=*e*/I=*i*] *imageInstance*

The ImageGenerateROIMask operation creates a Region Of Interest (ROI) mask for use with other ImageXXX commands. It assumes the top (or /W specified) graph contains an image and that the user has drawn shapes using Igor's drawing tools in a specific manner.

ImageGenerateROIMask creates an unsigned byte mask matrix with the same x and y dimensions and scaling as the specified image. The mask is initially filled with zeros. Then the drawing layer, progFront, in the graph is scanned for suitable fillable draw objects. The area inside each shape is filled with ones unless the fill mode for the shape is set to erase in which case the area is filled with zeros.

Flags

/E= <i>e</i>	Changes value used for the exterior from the default zero values to <i>e</i> .
/I= <i>i</i>	Changes value used for the interior from the default one values to <i>i</i> .
/W= <i>winName</i>	Looks for the named graph window or subwindow containing appropriate image masks drawn by the user. If /W is omitted, ImageGenerateROIMask uses the top graph window or subwindow. When identifying a subwindow with <i>winName</i> , see Subwindow Syntax on page III-92 for details on forming the window hierarchy.

Details

To generate an ROI wave for use with most image processing operations you need to set the values of interior pixels to zero and exterior pixels to one using /E=1/I=0.

Suitable objects are those that can be filled (rectangles, ovals, etc.) and which are plotted in axis coordinate mode specified using the same axes by which the specified image instance is displayed. Objects plotted in plot relative mode are also used. However, this is not recommended because it will give correct results only if the image exactly fills the plot rectangle. If you use axis coordinate mode then you can zoom in or out as desired and the resulting mask will still be correct.

Note that the shapes can have their fill mode set to none. This still results in a fill of ones. This is to allow the drawn ROI to be visible on the graph without obscuring the image. However cutouts (fills with erase mode) will obscure the image.

Note also that nonfill drawing objects are ignored. You can use this fact to create callouts and other annotations.

In a future version of Igor, we may create a new drawing layer in graphs dedicated to ROIs.

The mask generated is named M_ROIMask and is generated in the current data folder.