Other Tools

Igor provides a number of utility operations that help you manage and manipulate image data.

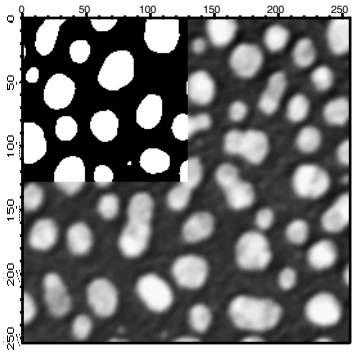
Working with ROI

Many of the image processing operations support a region of interest (ROI). The region of interest is the portion of the image that we want to affect by an operation. Igor supports a completely general ROI, specified as a binary wave (unsigned byte) that has the same dimensions as the image. Set the ROI wave to zero for all pixels within the region of interest and to any other value outside the region of interest. Note that in some situations it is useful to set the ROI pixels to a nonzero value (e.g., if you use the wave as a multiplicative factor in a mathematical operation). You can use ImageTransform with the invert keyword to quickly convert between the two options.

The easiest way to create an ROI wave is directly from the command line. For example, an ROI wave that covers a quarter of the blobs image may be generated as follows:

```
Duplicate root:images:blobs myROI
Redimension/B/U myROI
myROI=64                        // arbitrary nonzero value
myROI[0,128][0,127]=0           // the actual region of interest

// Example of usage:
ImageThreshold/Q/M=1/R=myROI root:images:blobs
NewImage M_ImageThresh
```



If you want to define the ROI using graphical drawing tools you need to open the tools and set the drawing layer to progFront. This can be done with the following instructions:

```
SetDrawLayer progFront
ShowTools/A rect        // selects the rectangle drawing tool first
```

Generating ROI Masks

You can now define the ROI as the area inside all the closed shapes that you draw. When you complete drawing the ROI you need to execute the commands:

```
HideTools/A             // Drawing tools are not needed any more.
// M_ImageThresh is the top image in this example.
ImageGenerateROIMask M_ImageThresh
// The ROI wave has been created; To see it,
NewImage M_ROIMask
```

The Image Processing procedures provide a utility for creating an ROI wave by drawing on a displayed image.

Converting Boundary to a Mask

A third way of generating an ROI mask is using the **ImageBoundaryToMask** operation (see page V-367). This operation takes a pair of waves (y versus x) that contain pixel values and scan-converts them into a mask. When you invoke the operation you also have to specify the rectangular width and height of the output mask.