

Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

Select Data ...

Select Variables ...

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.



Workspace

Stack: Base

Name Value

| Name | Value |
|------|-------|
|------|-------|

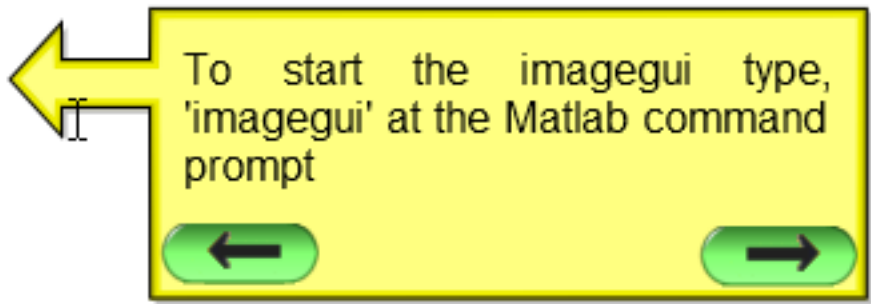
Current Directory Workspace

Command History

---%-- 5/6/11 11:22 AM ---%

Command Window

>> imagegui



To start the imagegui type, 'imagegui' at the Matlab command prompt

Data Selection Panel

Name of Image Matrix

Select Data

Name of Variable Matrix

Select Variables



This is the main window for the imagegui.
All other windows will open up within this window.

← →

Name of Image Matrix **Name of Variable Matrix**

Select Data Select Variables

This is the menu bar. All functions are called from the drop down menus located on this bar.

← →

Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

Select Data

Select Variables



This is the data selection panel. This is where the user can select the data you want to use.

The data shown in these dropdown lists is the active data that will be processed.



Let's take a look at what is available within the menus.

Name of Image

Select Data



a Selection Panel

- Save
- Load
- Reset
- Exit

This is the 'File' menu. It contains the following options:

Save - This allows the user to save the current matlab workspace. All variables within the workspace are saved to the file specified.

Load - This allows the user to load a matlab workspace that was previously saved.

NOTE: This does not load the variables into the imagegui. This has to be done using the 'Import From Workspace' function. (See 'Data Pre Processing' menu).

Reset - resets the gui. This clears all menus and data that has been loaded into the gui, but it does not clear the Matlab workspace.

Exit - This closes the gui.



Data Selection Panel

- Import Data
- Normalize Data
- Crop Image
- Filter Image
- Cut Up Stage Raster
- Align images
- Extract ROI



This is the 'Data Pre Processing' menu. It contains the following options:

Import Data - This contains 3 sub functions including 'Import from Workspace', 'import bif file' and 'import bif6 file'. Import from workspace allows the user to import variables already in the Matlab workspace. The .bif and .bif6 importers allow the user to import the V4 (.bif) and V6 (.bif6) binary image files exported from the iontof software.

Normalize Data - This function allows the user to normalize the image data by the total counts or sum of selected peaks.

Crop Image - This function allows the user to crop an image so they can focus on a sub region or eliminate unwanted features.

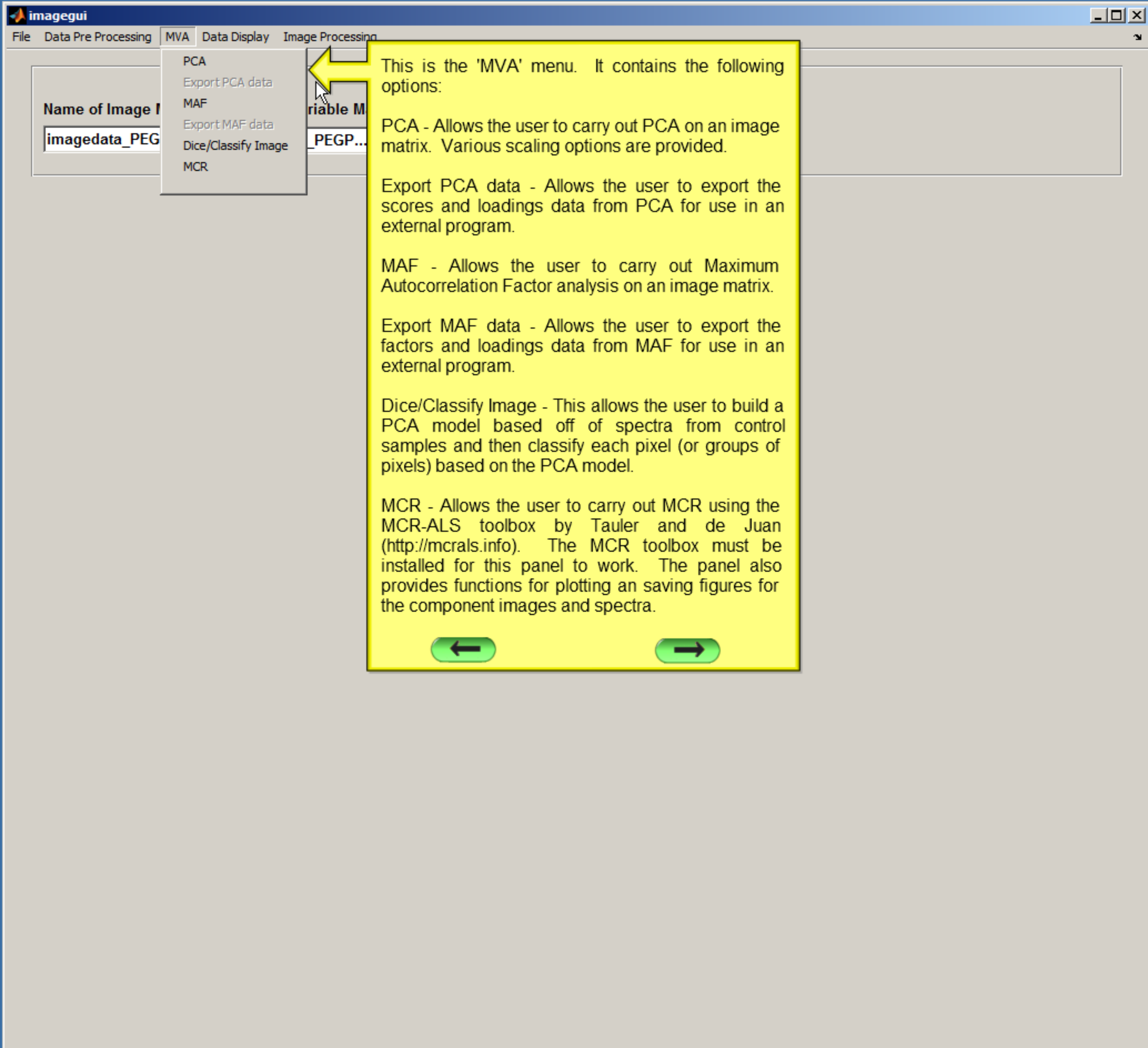
Filter Image - This contains some filter functions that can be carried out on an image. This is mostly experimental

Cut Up Stage Raster - This function allows the user to cut up a stage raster image into individual tiles. Though it was designed for use with stage raster files, it can be used for any image.

Align Images - This panel allows the user to align any two images in the X and Y directions.

Extract ROI - This panel allows the user to extract region of interest images using any imported or created image as a mask.





- PCA
- Export PCA data
- MAF
- Export MAF data
- Dice/Classify Image
- MCR

This is the 'MVA' menu. It contains the following options:

PCA - Allows the user to carry out PCA on an image matrix. Various scaling options are provided.

Export PCA data - Allows the user to export the scores and loadings data from PCA for use in an external program.

MAF - Allows the user to carry out Maximum Autocorrelation Factor analysis on an image matrix.

Export MAF data - Allows the user to export the factors and loadings data from MAF for use in an external program.

Dice/Classify Image - This allows the user to build a PCA model based off of spectra from control samples and then classify each pixel (or groups of pixels) based on the PCA model.

MCR - Allows the user to carry out MCR using the MCR-ALS toolbox by Tauler and de Juan (<http://mcrals.info>). The MCR toolbox must be installed for this panel to work. The panel also provides functions for plotting and saving figures for the component images and spectra.



Name of Image Matrix
imagedata_PEG...

- Plot Image Data
- Plot image peak ratio
- Image Overlay
- PCA
- MAF
- PC Data Browser
- Scalebar Tools
- Image Properties
- Plot Psuedo Spectrum

This is the 'Data Display' menu. It contains the following options:

Plot Image Data - This function allows the user to create image plots of individual peaks, or sum images of selected peaks. Sum images can be saved and used later in overlay plots.

Plot image peak ratio - This function allows the user to create and plot the ratio of any two peaks. Ratios are calculated pixel by pixel.

Image Overlay - This function allows the user to create RGB overlays from selected peaks or sums of peaks.

PCA - This contains two sub fuctions, 'Plot PCA Scores' and 'Plot PCA loadings'. These allow the user to plot the scores and loadings and apply scale bars and labels where appropriate.

MAF - This contains two sub fuctions, 'Plot MAF Scores' and 'Plot MAF inverse loadings'. These allow the user to plot the scores and loadings and apply scale bars and labels where appropriate.

PC Data Browser - This panel allows the user to plot data for any peak seen on a given principal component after subtracting out data from previous principal components.

Scalebar Tools - This function/panel allows the user to place a custom scale bar on a given image.

Image Properties - This function/panel allows the user to label various parts of a given image.

Plot Psuedo Spectrum - This panel allows the user to plot a spectrum for the peaks included in a given data set. Since the imagegui does not import raw data it should be remembered that this spectrum will only include the peaks included in the imported data.



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Menu functions that are greyed out (such as the 'PCA' and 'MAF' sub menus) cannot be selected until the appropriate data has been generated and saved.



Data Selection Panel

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Name of Variable Matrix

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.

Please see the other imagegui tutorials for detailed information on how to use each function in the imagegui.

