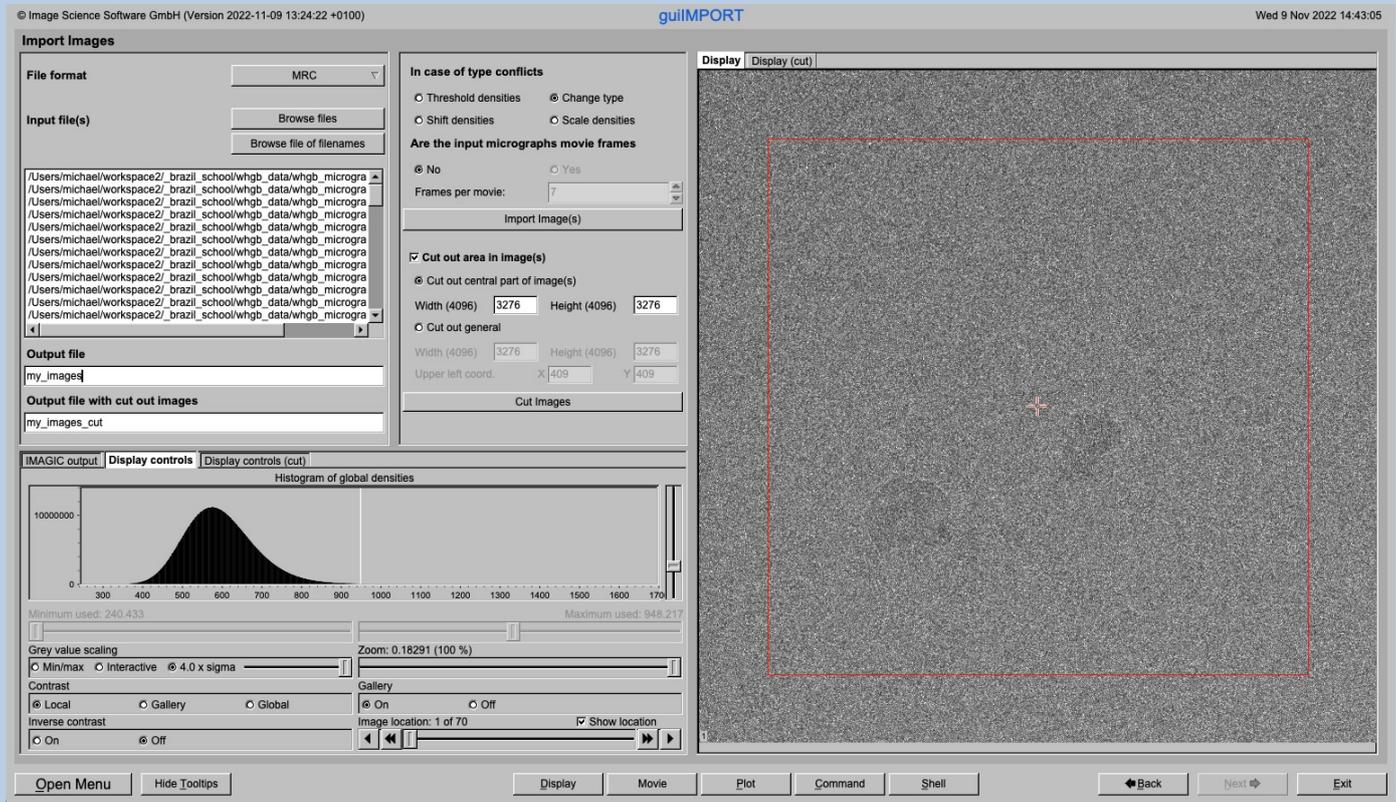




A Brief Introduction

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www.ImageScience.de
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The IMAGIC guiIMPORT program



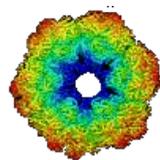
The **guiIMPORT** program converts files in any 3DEM format to the IMAGIC format and stores all input images/micrographs into a single stacked IMAGIC Image file.

This is a brief hands-on on how to use IMAGIC GUI oriented programs and how to work with **guiIMPORT**:

CONTENT:

- IMAGIC GUI programs How to use IMAGIC GUI programs
- **guiIMPORT** How to convert images to IMAGIC
- Error hints How to send us feedback





IMAGIC

GUI Programs



The Working Directory

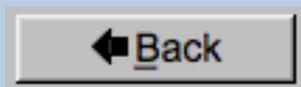
If **guiIMPORT** is called from the programs list, by using an icon or in a command line the working directory will be your default system directory.

If **guiIMPORT** is called by an IMAGIC command in a terminal / command window

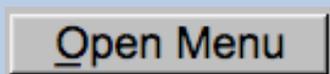
```
IMAGIC-COMMAND : guiIMPORT
```

the working directory will be the directory used in this window.

If you want to change this directory use the “Back” button



or the “Open Menu” button



to navigate to the “Start” page where you can specify the working directory of **guiIMPORT**.

All output files will be stored in the working directory which you have specified on the start page.

Input files can be chosen from other directories.



Help

Move the cursor on (nearly) any item (questions, radio buttons, display windows...) shown on the pages and you will get context sensitive help.

Output file:

whgb_micrograph

Name of the output IMAGIC file containing the imported micrographs.

Note that the name of this output file will be created automatically.

Select format ▼

In case of type conflicts

Select the input file format.

Note: Currently only TIFF and MRC files can be imported.

MRC:
This is one of the oldest image formats in use in electron microscopy. One of the philosophies behind this data format is that it is compatible to the CCP4 format in use in X-ray crystallography.

TIFF (Tagged Image Format):
This has become one of the standard formats in desk-top publishing oriented image processing.



The “Start” Page

guiIMPORT starts with the “Import Images” page.

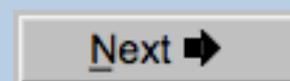
If you would like to adjust some **guiIMPORT** programs setting before importing the images use the “Back” button to navigate to the “Start” page.



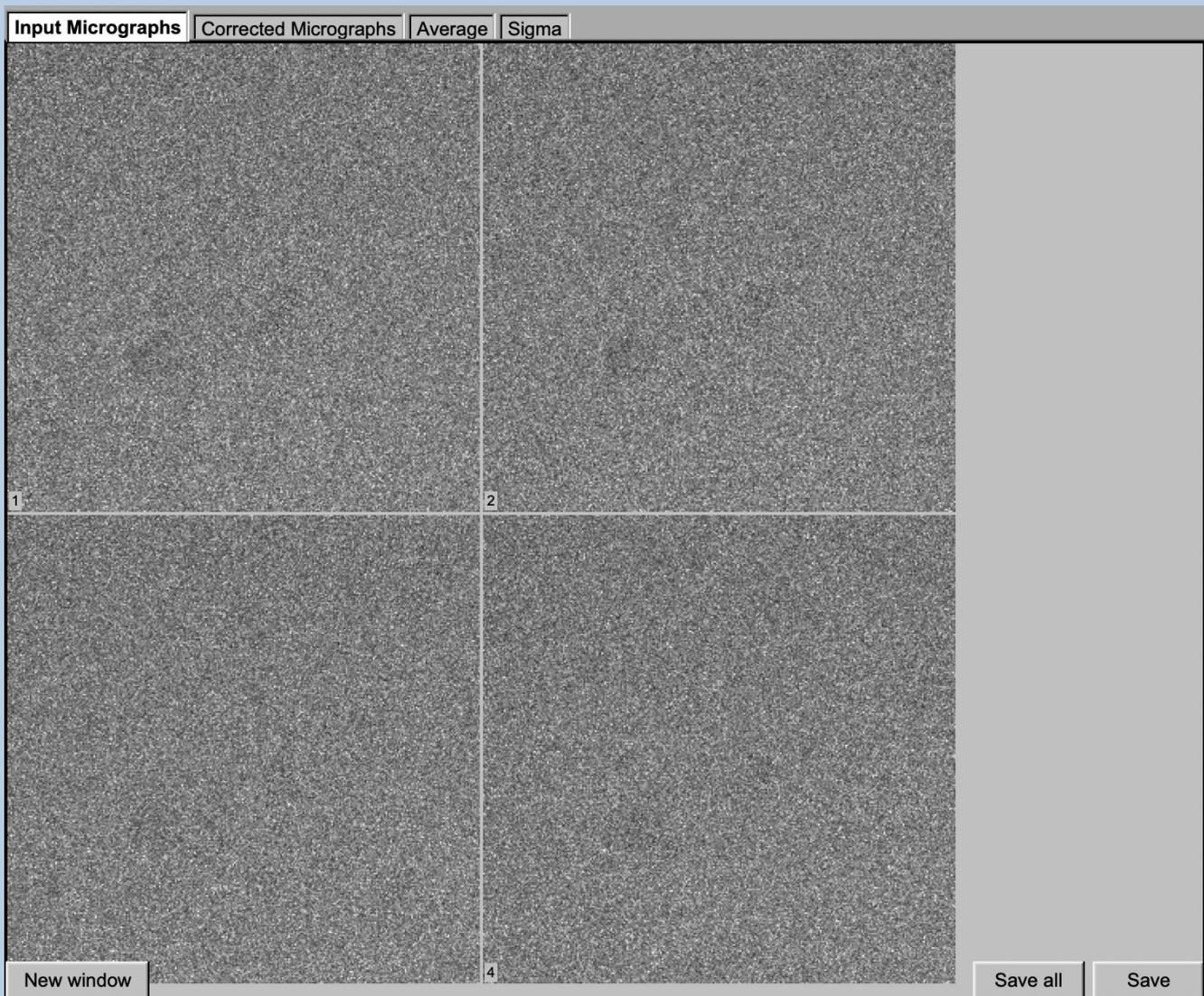
On the “Start” page you can set some program parameters:

- a) the working directory
- b) the size of the **guiIMPORT** program windows and/or text (a re-start is needed)
- c) the type of file browser

Having adjusted all setting use the “Next” button to navigate back to the “Import Images” page.



Display



In the right part of a typical **IMAGIC GUI program** page you will find displayed images - usually the input and the output images.

You can press the tabs to toggle between the various displays.

Double click into the wanted images or use the "New Window" button to get an enlarged display window. Use "Save" to store the display (JPG).

To adjust the display settings use the related display control tab on the left hand side of the page. Refer to **guiDISPLAY**.



“Display Control” Tabs

The visualisation settings of the images shown on the right-hand side of each **IMAGIC GUI program** page can be adjusted in its own related “Display control” tab on the bottom left part of each page. Also refer to **guiDISPLAY**.

Grey value scaling: Adjust the contrast

Min/Max: Scale the grey-values to minimum/maximum

Interactive: Set the limits by giving numbers

Sigma: Use an amount of sigma to set the limits

Contrast

How to calculate the grey value scaling

Local: Calculated in each image separately

Global: Calculated using all image densities
(as displayed in the histogram)

Gallery: Calculated in the currently displayed images

Inverse contrast:

Use one of the radio buttons

Zoom

Enlarge the displayed images

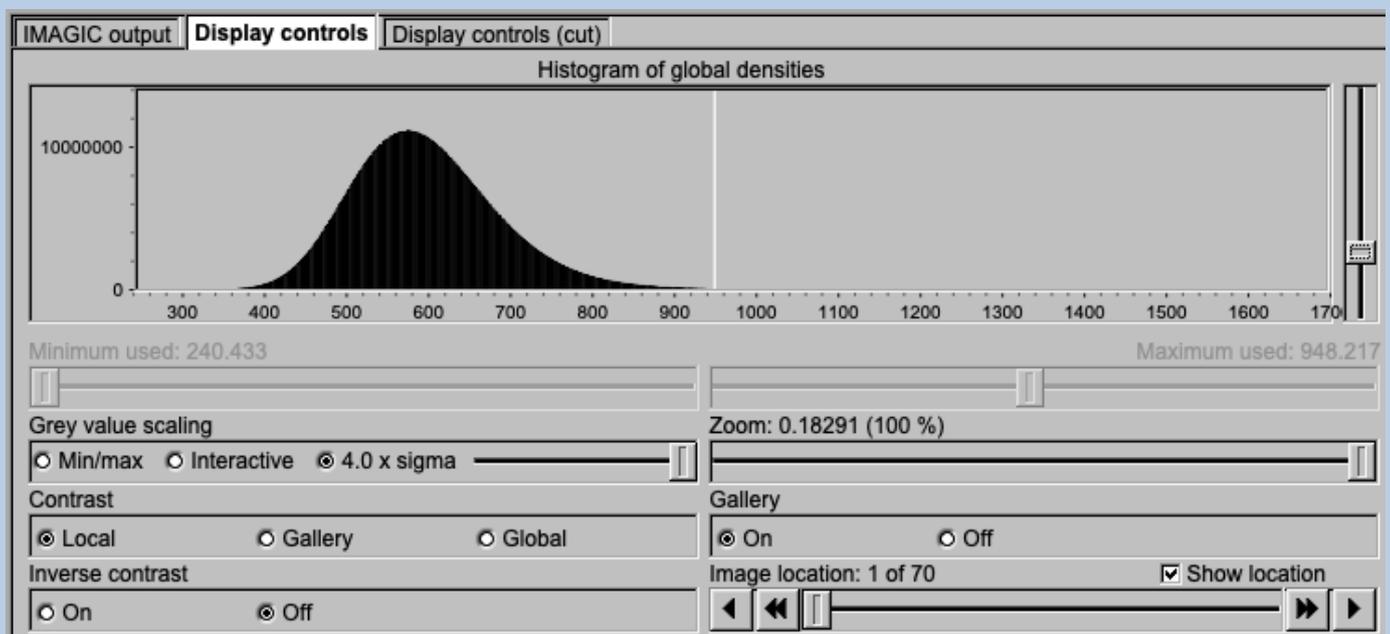
Gallery

On Display the images in a gallery
(may be you need another zoom to see more than one image)

Off Show only one image

Image Locations.

Use the slider or the arrows to select image locations



A Typical Page - "Plot Control" Tabs

The visualisation settings of curves/spectra is shown on the right-hand side of an **IMAGIC GUI program** page can be adjusted in its own related "Plot control" tab on the bottom left part of each page. Also refer to **guiPLOT**.

Style, Colour, Grid: Adjust the curve line style, the colour and add a grid if wanted

Horizontal, vertical scaling: Set minimal and maximal horizontal or vertical limits

Plot title Set the text of the plot title

Text along ... Set the text along the given axis

Use for all plots: Use the setting for all plots in a file independent of what is input in the PLT file

Reset:. Reset to the automatic values

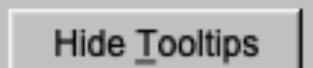
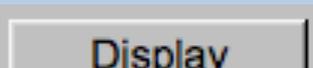
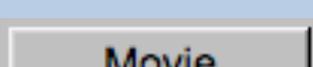
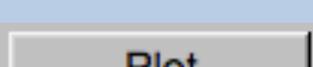
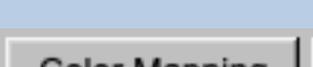
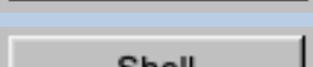
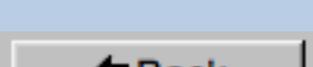
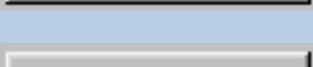
Style Select curve style ▾	Colour Select curve colour ▾	Grid Select curve grid ▾
Horizontal scaling 1.00	<input type="checkbox"/> Use for all plots 32.00	Reset
Vertical scaling -19.21	<input type="checkbox"/> Use for all plots 17.00	Reset
Plot title Fourier Ring Information - 1/2-bit	<input type="checkbox"/> Use for all plots	Reset
Text along horizontal axis Radius in Fourier space	<input type="checkbox"/> Use for all plots	Reset
Text along vertical axis	<input type="checkbox"/> Use for all plots	Reset



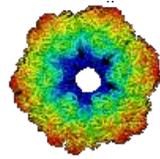
The Toolbar

There is a toolbar at the bottom of each **guiIMPORT** page.

The toolbar buttons:

	Open the MENU to navigate to each page wanted
	Show or hide the context sensitive tooltips (the help text may sometimes disturb)
	
	Open a DISPLAY page to visualize IMAGIC images. Refer to guiDISPLAY .
	Open a MOVIE page (display in an endless loop). Refer to guiDISPLAY
	Open a PLOT page to show IMAGIC curves. Refer to guiPLOT
	Open a DISPLAY page to visualize IMAGIC images using a colour map stored in another input.
	Open a list to run any IMAGIC command. Refer to guiMAGIC .
	Run a shell / terminal page. command
	Go to the previous page
	Continue with the next page
	Exit guiIMPORT



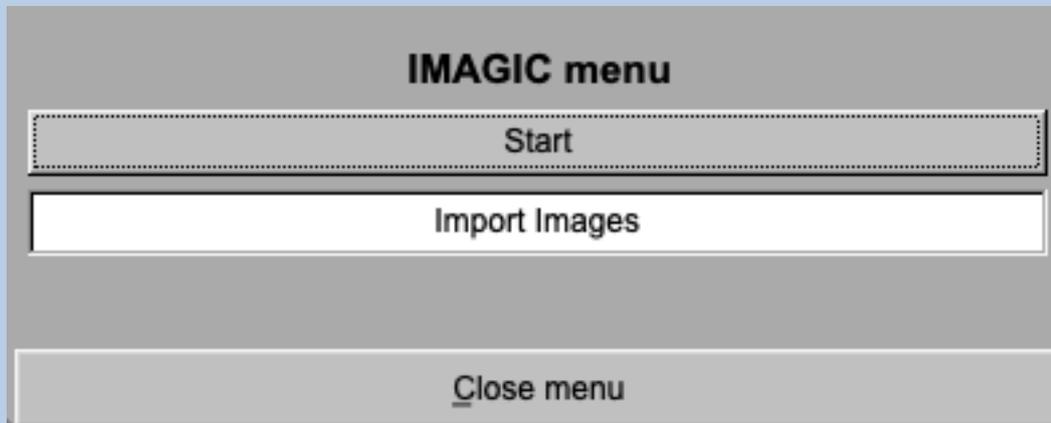


IMAGIC

guiIMPORT



The guiIMPORT Menu



PAGES:

guiIMPORT:

Import Micrographs: Convert micrographs/images into
IMAGIC image format

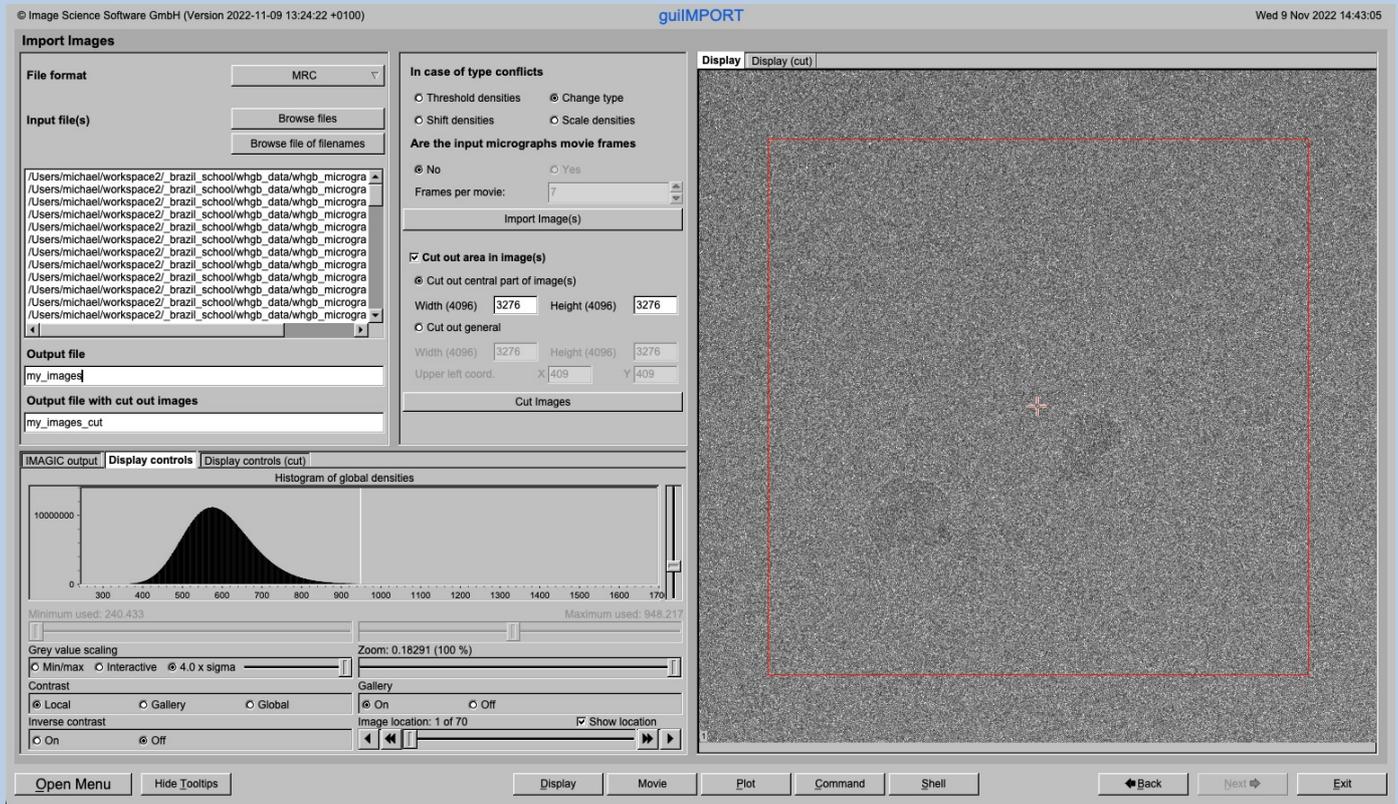
General:

Start: Page to adjust some program parameters

Close menu: Close this menu and return to last page.



The IMAGIC guiIMPORT program



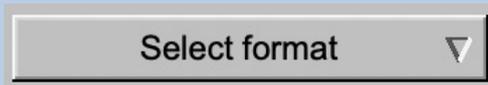
DESCRIPTION:

Convert files in any 3DEM format to the IMAGIC format and store all input images/micrographs into a single stacked IMAGIC image file.



Input Format

Specify the file format in which your input images are stored. Click the “Select format” button



and choose one of the formats in the listing.

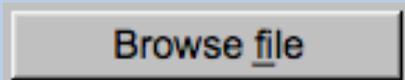


If you need help on the formats move the cursor into the “ Select format” button.

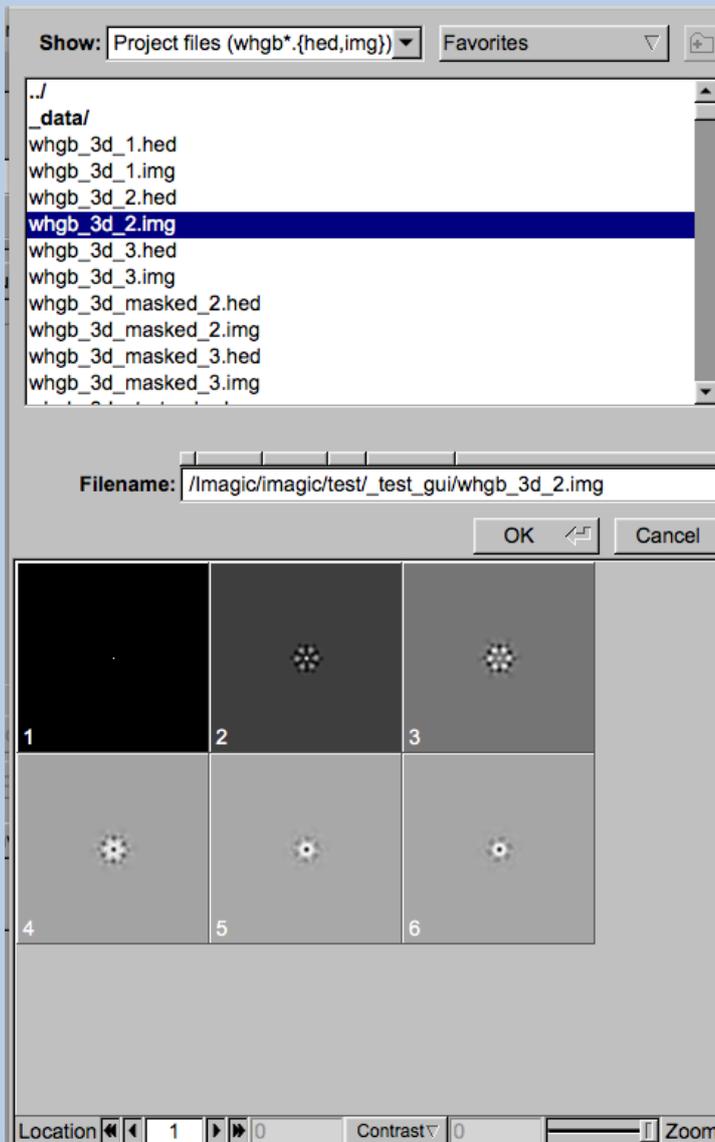


Input Files

Now you can use the “Browse file” button to choose the wanted input image files:

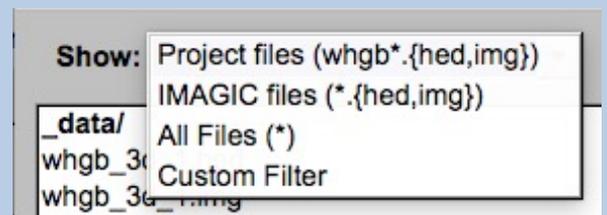


Pressing this button will open the IMAGIC file chooser:



Choose all wanted files by clicking their names.

You can use a pre-selection of the files shown:



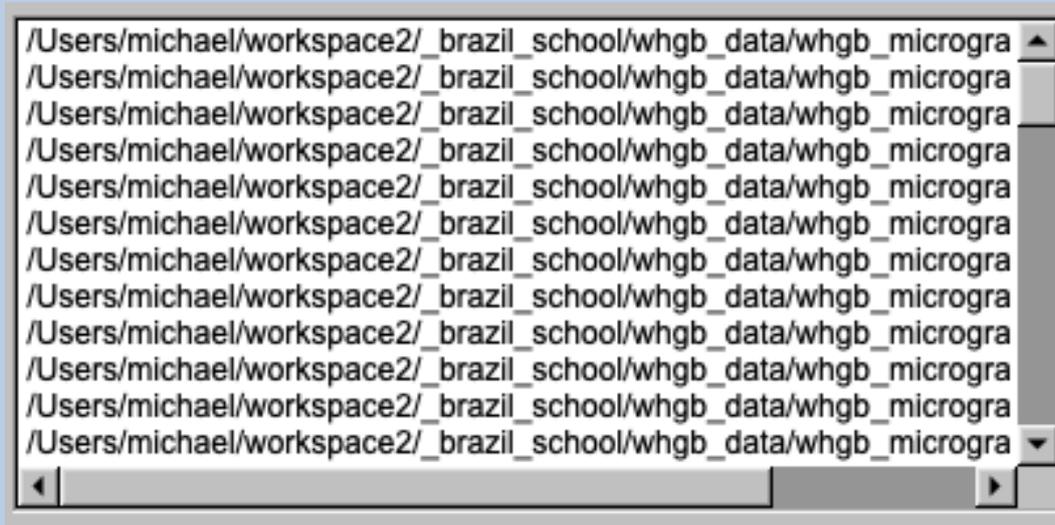
If the images are in IMAGIC format you can get a pre-view of the images.



Note that you can store your directory in “Favorites”.



If wanted you can edit the list of files. But be careful there is no automatic control of file names in this list.



You can also specify a “File of filenames” text file which contains the names of the wanted input image files (one per line).

Output File

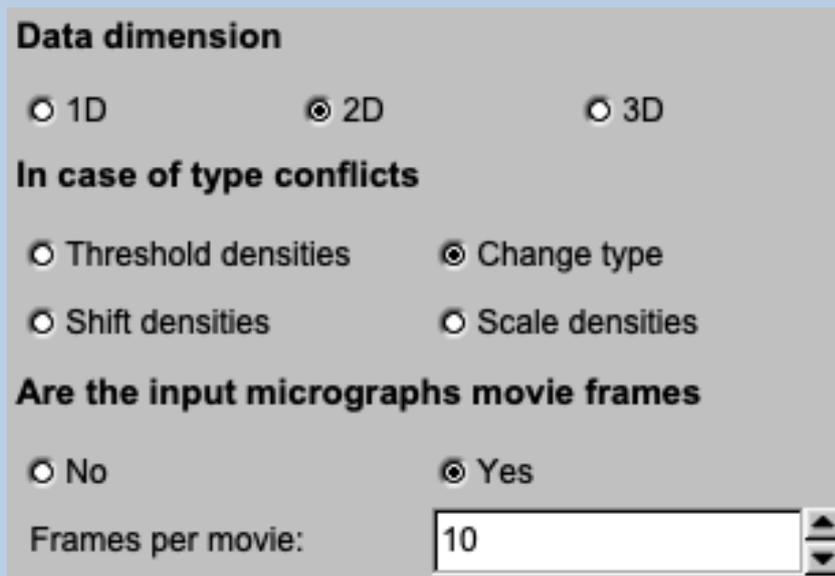
Do not forget to specify the name of the IMAGIC output file which will contain the stack of imported images.



Format Parameters

Depending on the format of the input images you have to specify a number of parameters or options.

Format MRC, for example:



Data dimension

1D 2D 3D

In case of type conflicts

Threshold densities Change type

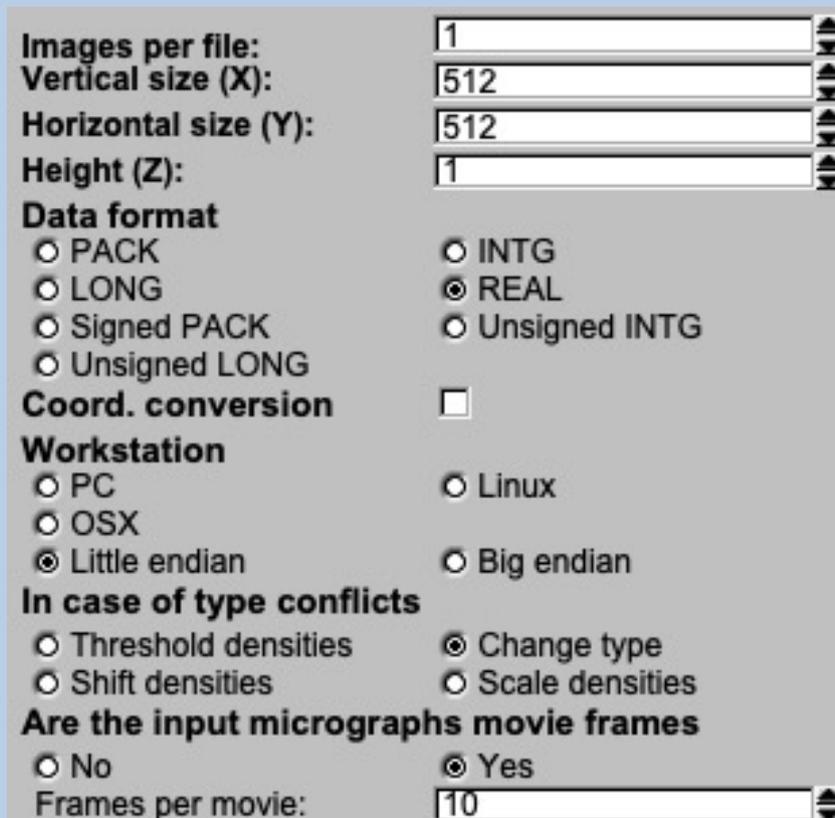
Shift densities Scale densities

Are the input micrographs movie frames

No Yes

Frames per movie:

Format DATA_ONLY, for example:



Images per file:

Vertical size (X):

Horizontal size (Y):

Height (Z):

Data format

PACK INTG

LONG REAL

Signed PACK Unsigned INTG

Unsigned LONG

Coord. conversion

Workstation

PC Linux

OSX Big endian

Little endian

In case of type conflicts

Threshold densities Change type

Shift densities Scale densities

Are the input micrographs movie frames

No Yes

Frames per movie:

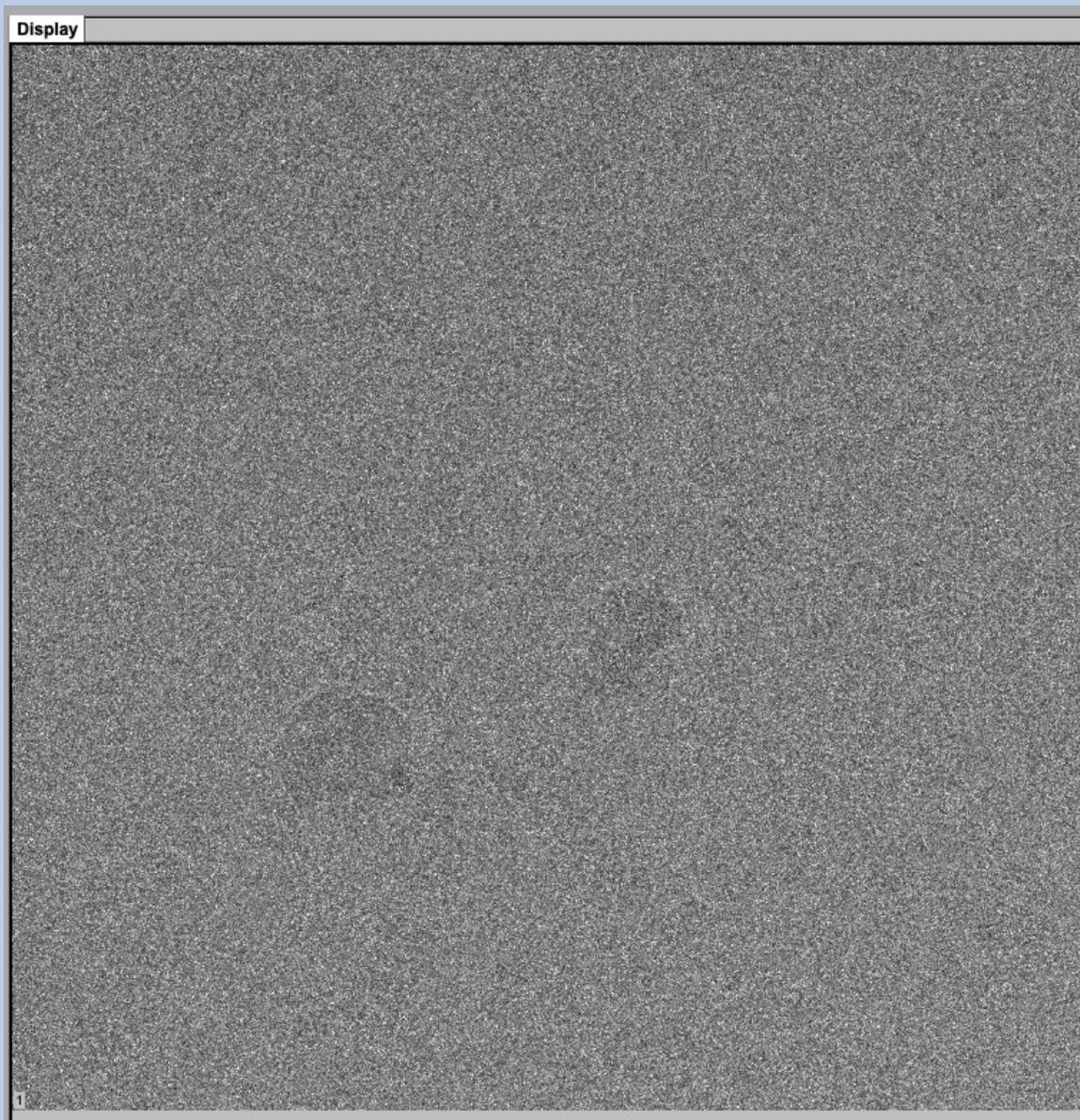


Let's do it: Import Images

Having specified every information needed click the “Import” button to start the import of the image(s), 3D volume(s) or spectra/curves.



The imported images are shown in the display tab on the right-hand side. See chapter “A Typical Page - Display control tabs”.



Cut images

Having imported the input data, you may want to not use the full size of the images, 3D volumes or spectra but only a part of them.

Clicking the “Cut out area” option you can cut-out parts of the imported data. Here the the options are shown for input images:

Cut out area in image(s)

Cut out central part of image(s)

Width (4096) Height (4096)

Cut out general

Width (4096) Height (4096)

Upper left coord. X Y

Cut Images

The chosen part is shown in the display window. You can cut-out a central part or any part wanted. The cut-out part is the same in all locations, of course.

The name of the output file containing the cut-out data is suggested on the left-hand side. As usual you can change this name, of course.

Do not forget to specify the name of the output file which will contain the cut-out data.

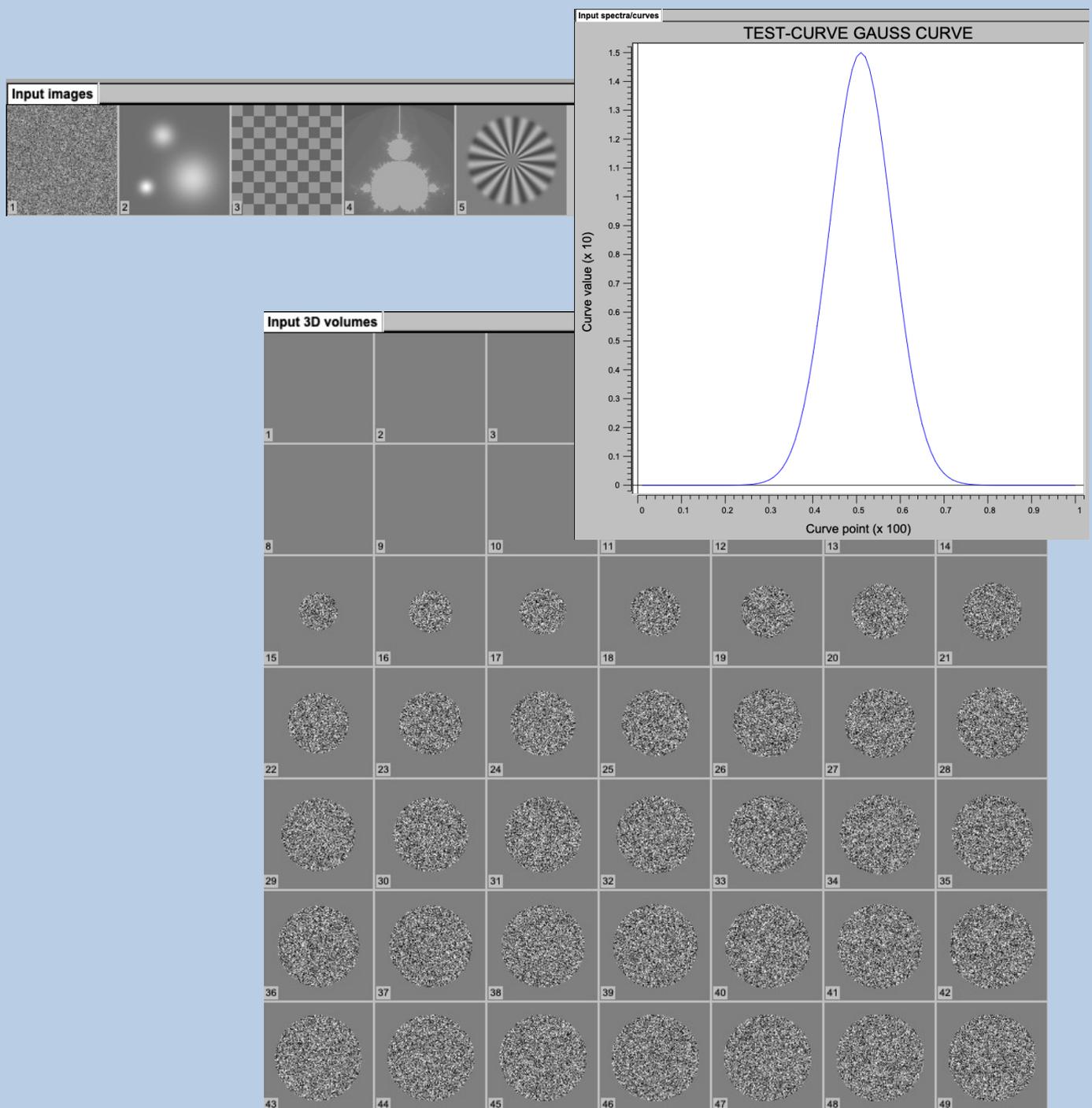
Having specified everything click the “Cut” button to run the calculations.

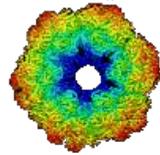


Dimensions

In the previous pages **guiIMPORT** was described for images.

But input can also be curves/spectra/1D image or 3D volume(s) files. In this case the pages are modified for the other dimension but the content and the use of the pages are the same or similar.





IMAGIC

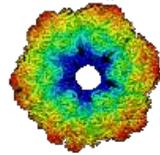
guiIMPORT

Not (yet) possible

The following options are not (yet) possible:

- Run in batch mode





IMAGIC

guiIMPORT

Feedback / Error hints

We intensively tested the **guiIMPORT** program and tried to find all possible errors and inconsistencies. But the current program is very complex and still in progress. So you may still find some problems.

We are happy to get feed-back. Please send your comments, error hints etc. to

imagic@ImageScience.de

THANK YOU VERY MUCH.



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