Category/Name/Description	Parameters	Comments/default
Main Input/Output		
input:load current image to process (from Omero or Files)	**project**:name of project name **dataset**:name of dataset name **image**:name of the image **channel**:the channel number **frame**:the frame number	**project**:?project? **dataset**: ?dataset? **image**:?image? **channel**:?channel? **frame**:?frame? Channel and frame number start at 1
output:save the current image (to Omero or Files)	**project**:name of project name **dataset**:name of dataset name **image**:name of the image	**project**:?project? **dataset**:?dataset? Will delete previous image with same name
Additional Input/Output		
attach:attach a file to an image data (in Omero or Files)	**project**:name of project name **dataset**:name of dataset name **image**:name of the image data **dir**:directory **file**:filename to attach to the project/dataset/name image data	**project**:?project? **dataset**: ?dataset? **image:?image?** Can use special directory names (?ij?,?home?,?tmp?
attachList:attach a list of files to an image data (in Omero or Files)	**project**:name of project name **dataset**:name of dataset name **image**:name of the image data **dir**:directory **list**:list of filenames to attach to the project/dataset/image image data	**project**:?project? **dataset**: ?dataset? **image:?image?** Can use special directory names (?ij?,?home?,?tmp?
delete:delete a file	**dir**:directory **file**:file name	(keywords for file) (keywords for dir)
deleteList:delete a list of files	**dir**:directory to find files to delete **list**:list of files names separated by **,**	(keywords for file) (keywords for dir)
inputBinning:input a binned data (reduce memory)	**project**:name of project name **dataset**:name of dataset name **image**:name of the image **channel**:the channel number **frame**:the frame number **binningXY**:binning in XY **binningZ**:binning in Z	**project**:?project? **dataset**: ?dataset? **image**:?image? **channel**:?channel? **frame**:?frame? **binningXY**:1 **binningZ**:1
load:load an image from file	**dir**:directory **file**:file name(keywords for file) (keywords for dir)	(keywords for file) (keywords for dir)
loadOMERO:load a hyperstack image from OMERO (use with caution)	**project**:name of project name **dataset**:name of dataset name **image**:name of the image **channels**:the channels to load (c0-c1) **frames**:the frames to load (t0-t1)	**project**:?project? **dataset**: ?dataset? **image**:?image? **channels**:1 **frames**:1

Category/Name/Description	Parameters	Comments/default
	(you can use **all** to specify all channels or all frames)	Channel and frame number start at 1
mergeChannels: merge color channels	**dir**:directory for the files to merge **list**: list of files to merge **rgb**: rgb mode (yes) or composite mode (no)	(keywords for dir) (keywords for file) **rgb**:no
noInput:to use when no specific input is required as first module	No parameters	
save:save an image as a file	**dir**:directory **file**:file name **format**:file format to save	(keywords for file) (keywords for dir) **format:tif** by default, else can be **zip**
sequence: open a stack as sequence of 2D images	**dir**: directory containing the files **filename**: pattern that file names should contain (or * for all files) **dimension**: Z (or T)	(keywords for dir) **filename**:* **dimension**:Z
test:create a image with random noise	**3D**:creates 3D image	**3D**:**no** (will create a 2D image by default, use **yes** for a 3D image)
Calibration		
calibrationLoadAndApply: will load a saved calibration and apply it to an image (current one by default). Will update calibration on OMERO.	**dir**:directory of the saved calibration **file**:name of the saved calibration file **project**:name of project name **dataset**:name of dataset name **image**:name of the image	**project**:?project? **dataset**: ?dataset? **image**:?image? (keywords for file) (keywords for dir)
calibrationSave:saves the calibration of the current image into a file	**dir**:directory of the saved calibration **file**:name of the saved calibration file	(keywords for file) (keywords for dir)
calibrationSet:will set the calibration to the current image	**scaleXY**:pixel size in XY **scaleZ**:pixel size in Z	**scaleXY**:1 **scaleZ**:1
Processing		
crop:crop the image using a Roi	**dir**:directory of the roi **file**:name of the roi file	Will use ImageJ roi file
cropZ:crop the image in the Z dimension	**zMin**:slice number for first z **zMax**:slice number for last z	Slice numbering starts at 0
invert:invert gray values	No parameters	
math:arithmetic operation between images	**dir**:directory for the other image **file**: file name for the other image **operation**:arithmetic operation to perform **coef0**:coefficient to apply for first (current image)	**coef0**: 1 **coef1**: 1 The available operations are : **add**, **mult**, **max**, **min** and

Category/Name/Description	Parameters	Comments/default
	coef1:coefficient to apply for second (other image)	**diff** A subtraction will be performed with **add** and coefficient -1
normalise:normalise intensity values	**mean**:new mean value **sd**:new standard deviation value	**mean**:128 **sd**:32
project:project in Z a 3D image	No parameters	Will perform maximum projection
scale:scale a image	**scalex**:the scale ratio in X **scaley**:the scale ratio in Y **scalez**:the scale ratio in Z **normalise**:normalise the Z dimension (will override **scalez**)	**scalex**:1 **scaley**:1 **scalez**:1 **normalise**:**no** (put "**yes**" to normalise)
Filtering		
filters:filter an image (2D and 3D version)	**radxy**:the radius of filtering in X-Y **radz**:the radius of filtering in Z **filter**:the filter to apply	**radxy**:2 **radz**:0 Available **filter** parameter values are : **median**, **mean**, **tophat, open, close, min and max**
filtersCLIJ:filter an image (2D and 3D version) using CLIJ.	**radxy**:the radius of filtering in X-Y **radz**:the radius of filtering in Z **filter**:the filter to apply	**radxy**:2 **radz**:0 Available **filter** parameter values are : **median**, **mean**, **tophat, open, close, min and max**
rollingBall:applies the rolling ball algorithm from ImageJ (2D)	**radius**:radius of the rolling ball **dark**:dark (yes) or light (no) background	**radius**:50 **dark**:50
Threshold		
autoThreshold:threshold an image using automatic threshold	**method**: the method to use (based on IJ automatic threshold) **dark**:for dark background	**method** can be one of the following : **Isodata**, **Otsu**, **Intermodes**, **Yen**, **Triangle**, **Mean**, **Huang**, **IJ_Isodata** **dark** is **yes** by default, set it to **no** for light background
threshold:threshold an image (creates binary image)	**value**:the thresholding value (for bright pixels)	
percentileThreshold:perform thresholding based on percentage of brightest pixels	**percentile**:percentile value between 0 and 1 (for instance 0.05 will compute the threshold for 95% of the pixels, *i.e* 5% of	

Category/Name/Description	Parameters	Comments/default
	the brightest pixels)	
Threshold / Segment		
hysteresis:perform a hysteresis threshloding	**minValue**:low threshold value **maxValue**:high threshold value **labeling**:also labels the image	Keep objects thresholded with low threshold but containing values with high threshold) **labeling**:**no** (will create a binary image, set to **yes** to create a labelled image)
iterative:iterative thresholding, detect objects using multiple thresholds, based on compactness criteria	**minVolume**:minimum volume for objects **maxVolume**:maximum volume for objects **minThreshold**:minimum threshold	**minVolume**:100 **maxVolume**: -1 (no maximum limit) **minThreshold**:0
label:label a binary image and detect individuals objects	**minVolume**:minimum volume for objects **maxVolume**:maximum volume for objects **unit**: yes if volume in unit, else in voxels	**minVolume**:0 **maxVolume**: -1 (no limit on max volume) **unit**:no (voxels by default)
watershed:performs watershed segmentation	**seedsRadius**: radius in X-Y-Z to compute seeds (in pixels) **seedsThreshold**:minimum value to be considered as seeds **signalThreshold**:minimum value for signal	Will compute local maxima and use them as seeds for watershed
Post-processing / mathematical morphology		
biggest:keep only the biggest object from labelled image	No parameters	
closeLabels: performs closing on labelled objects	**radxy**:the radius of filtering in X-Y **radz**:the radius of filtering in Z	**radxy**:5 **radz**:0
excludeEdges:exclude labeled objects touching edges in XY and Z	**excludeZ**:exclude objects touching edges in Z	**excludeZ**:no (only exclude in XY by default)
fillHoles : fills holes in images using ImageJ algorithm (2D)	No parameters	
filterObjects:filter objects in a labelled image	**minValue**:minimum value **maxValue**:maximum value **descriptor**:the descriptor to use for filtering (**volume**, **compactness**, **elongation**, **compactnessDiscrete**)	**minValue:0** **maxValue:1** Objects not within the defined range will be deleted from labelled image
separate2D:performs ImageJ	No parameters	

Category/Name/Description	Parameters	Comments/default
binary watershed (to separate touching objects)		
Analysis / Measurement		
analyzeParticles:performs the analyzeParticles function from ImageJ (labelling + measurements)	**minSize**:minimum size for particles **maxSize**:maximum size for particles **unit**:yes/no if size in unit **minCirc**:minimum circularity **maxCirc**:maximum circularity **excludeEdges**:exclude particles touching **image** edges **list**:list of measurement **dir**:directory for results file **file**:name for results file	**minSize**:0 **maxSize**:-1(for no limit in size) **minCirc**:0 **maxCirc**:1 **list**:area,perimeter (default), additional measurement are **centroid**, **ellipse**, **shape** and **feret** **file**:results.csv
measurement:measurement to perform on labelled image	**list**:list of measurements to perform separated by comma **dir**:directory to save results **file**:file name to save results	(keywords for file) (keywords for dir) Available measurements for **list** : **volume**,**area**,**centroid**,**compactness**,**ellipsoid**,**DC** (Distance to Center)
multiColoc:quantify colocalisation between objects from two images	**dirLabel**:directory for the second image **fileLabel**:file name for the second image **dir**:directory for results file **file**: file name for results file	(keywords for file) (keywords for dir)
number:quantify objects inside other objects using another labelled image	**dirLabel**:directory for the second image **fileLabel**:file name for the second image **dir**:directory for results file **file**: file name for results file	(keywords for file) (keywords for dir) The results will be saved as a .csv file **file**:results.csv Results will be volume occupied by objects and number of objects
quantif:signal quantification to perform on a labelled image	**dirRaw**:directory to the raw signal image **fileRaw**:file name of the raw signal image **dir**:directory to save results **file**:file name to save results **list**:list of quantification to perform separated by comma	(keywords for file) (keywords for dir) The results will be saved as a .csv file **file**:results.csv Available quantifications in **list** : **mean,min,max,sd,sum,centre**
Analysis / Distances		
distancesBorder:compute distances center to center for all pairs of objects within the	**dir**:directory for results file **file**: file name for results file	(keywords for file) (keywords for dir)

Category/Name/Description	Parameters	Comments/default
image		
distancesBorder2:compute distances border to border for all pairs of objects in two images	**dirLabel**:directory for the second image **fileLabel**:file name for the second image **dir**:directory for results file **file**: file name for results file	(keywords for file) (keywords for dir)
distancesCenter:compute distances center to center for all pairs of objects within the image	**dir**:directory for results file **file**: file name for results file	(keywords for file) (keywords for dir)
distancesCenter2:compute distances center to center for all pairs of objects in two images	**dirLabel**:directory for the second image **fileLabel**:file name for the second image **dir**:directory for results file **file**: file name for results file	(keywords for file) (keywords for dir)
distancesCenterBorder2:compute distances center to border for all pairs of objects in two images	**dirLabel**:directory for the second image **fileLabel**:file name for the second image **dir**:directory for results file **file**: file name for results file	(keywords for file) (keywords for dir)
Analysis / Other		
density:compute the density of objects based on neighbouring distance analysis	**neighbours**:numbers of neighbours to use for computation **radius**:extension radius from each object	**Neighbours:**10
edt_evf:computes the euclidean distance transform (EDT) or the eroded volume fraction (EVF) as a normalised EDT	**evf**:computes EDT (no) or the EVF (yes)	**evf**:no (computes EDT by default) EVF is computed per label
evfLayers:compute objects distribution within evf layers (layers with equal volumes)	**dirEvf**:directory for the evf image **fileEvf**:file name of the evf image **nbLayers**:number of layers **dir**:directory for results image **file**:file name for results image	(keywords for file) (keywords for dir) A csv file along with a png image file will be output. The **-all** files will serve as control and contains all evf values within a layer.
localThickness:computes calibrated local thickness (based on ImageJ localThickness plugin)	No parameters	
Misc.		
exe:execute a program (experimental feature)	**dir**: full path to the exe file **file**: name of the exe file **arg**: argument of the executable	(keywords for file) (keywords for dir)
macro:run an ImageJ macro	**dir**:directory for macro **file**: macro file name	(keywords for file) (keywords for dir)

Category/Name/Description	Parameters	Comments/default
		The macro should create a new image window as a result
show:display the current image	**title**:title for the image	**title:?image?** (name of the current image) Will not display the image in batch mode.
sleep: pause execution	(sec)	
subProcess:execute a TAPAS processing file	**dir**:directory of the processing text file **file**: file name of the processing text file	(keywords for file) (keywords for dir)
Utilities		
appendResults:append a result table to another one	**dir**:directory for the files to process **file1**:first file **file2**:second file	(keywords for file) (keywords for dir) The **file2** will be appended to **file1**
mergeResults:merges two or more results tables	**dir**:directory for the files to merge **list**:list of file name to merge **fileMerge**:file name of the merged file (will be saved in the same directory as input files)	(keywords for file) (keywords for dir)

Specials keywords :

For the name of an image in Omero or a file name :

?project? : the name of the current project
?dataset? : the name of the current dataset
?image? : the name of the current image (?name? is deprecated from 0.6.3)
?channel? : the channel number of the current data
?channel+1? : the channel number +1 of the current data
?channel-1? : the channel number -1 of the current data
?frame? : the frame number of the current data
?frame+1? : the frame number +1 of the current data
?frame-1? : the frame number -1 of the current data

For a directory name :

?home? : the user home directory
?ij? : the ImageJ/Fiji directory
?tmp? : the system temporary directory