**ANY TOOL**

V 1.1.3

* Fixes a bug arising when an unsaved file was to be analysed (was unable to create a FileInfo object).
* Main formulas used in the tools are provided in the final report (excluding Camera noise tool and Variation Coefficient tool)

V 1.1.2

* The final analysis parameters table traces the OS, Java versions and ImageJ versions, as well as the operator and the report date.
* The Microscope info table displays (when found) the file creation date/Acquisition date (read from BioFormats).
* Fixes issues associated with access to resources (png images of the tool that is used for the report).

**Field Illumination Tool (FORMELY FIELD ILLUMINATION HOMOGENEITY) & BATCH**

V 1.1.3

* Fixes some bugs on the final analysis parameters table

V 1.1.2 as compared to original metroloJ plugin:

* Uses multiple channel images (up to 7 channels). Use of single channel images is still possible.
* Saturated images can be discarded from analysis. However, if subtle saturation is affecting images, this can be removed using a Gaussian blur.
* Adds some metrics (as defined in Faklaris et al. 2021)
* The reference zone used for metrics calculation can be chosen. This is either the 100% intensity zone or the last isointensity image bin zone (eg. 90%-100% intensity if bins number is 10). In the original MetroloJ plugin, the reference zone is the bottom-rightest pixel of the image having the maximum intensity.
* Introduces advanced report parameters:
* Possibility to highlight outside specs measurements
* Full control on produced data (pdf, excel files and analysis images).
* Setup information (including acquisition date read from metadata) is provided
* Analysis parameters are listed for the sake of traceability
* A batch mode is provided. Mind that all analysed images should have the same number of channels. In batch mode, the excitation/emission wavelength data is not traced in the final reports.

**AXIAL RESOLUTION TOOL (formerly Z profiler).**

V 1.1.3 as compared to orginal metroloJ plugin:

* Introduces a swap dimension checkbox in the main menu + a listener to get the expected XZY or YZX stack.

V 1.1.2 as compared to orginal metroloJ plugin:

* Allows analysis of multichannel images.
* Takes into account the dimension order (XYZ, XZY etc…).
* Uses different formulas for axial resolution.
* A summary of analysis parameters used is provided.
* Setup information (including acquisition date read from metadata) is provided
* Analysis parameters are listed for the sake of traceability

**PSF PROFILER tool & BATCH**

V 1.1.3

* Fixes a bug arising when anuli around beads touch the edges of the image. If this is the case, the enlarged ROI is not created and a null error
* Whenever the input dataset contains a single channel, the main menu’s bead channel identification box is disabled.
* Fixes a bug arising whenever the annuli drawn around beads for background estimation touch the edge of the image.
* Changes the LUT of the PSF views whenever the inverted square root image of the PSF option is used.

V 1.1.2 as compared to orginal metroloJ plugin:

* Uses multiple channel images (up to 7 channels). Please note there is no more possibility to use multiple single channel images and select opened windows.
* Possibility to use images containing multiple beads. Rejection *criteria* make sure identified beads images are not polluted/cropped. A 2D image is provided to show which beads are analysed. A beads’ coordinates excel file is produced.
* The user-provided bead size is compared to recommendations made in Faklaris et al. 2021
* Signal to background ratio estimation. Note background is not removed, only estimated.
* Indications are provided as to whether the dataset complies with the Shannon-Nyquist criterion.
* Saturation is analysed. An option was introduced to decide whether saturated channels should be excluded from analysis
* Uses different formulas for spatial resolution (formula is indicated in the final section of the report).
* A lateral PSF asymmetry ratio is computed
* Advanced report parameters are introduced:
* Possibility to highlight outside specs measurements
* Full control on produced data (pdf, excel files and analysis images).
* Square root image of the XY, XZ and YZ projections can be used to better inspect the PSF.
* Setup information (including acquisition date read from metadata) is provided
* Analysis parameters are listed for the sake of traceability
* A batch mode is provided. All analysed images should have the same number of channels (and are supposed to have the same excitation/emission wavelength specs).
* The average R² and SBR of the beads that are aggregated in the final SUMMARY report are provided

**Co-Registration tool (formerly Co-alignement) & BATCH**

V1.1.3

* Fixes a bug linked to the use of File.separator to specify “/” in the reportSection class. This was changed to “/” but macOS compatibility has to be checked.

V 1.1.2 as compared to orginal metroloJ plugin:

* Uses multiple channel images (up to 7 channels). Please note there is no more possibility to use multiple single channel images and select opened windows.
* Possibility to use images containing multiple beads. Rejection *criteria* make sure identified beads images are not polluted/cropped. A 2D image is provided to show which beads are analysed. A beads’ coordinates excel file is produced.
* The user-provided bead size is compared to recommendations made in Faklaris et al. 2021
* Signal to background ratio estimation. Note background is not removed, only estimated.
* Indications are provided as to whether the dataset complies with the Shannon-Nyquist criterion.
* Saturation is analysed. An option was introduced to decide whether saturated channels should be excluded from analysis
* A precision is provided in the report, to fully trace which reference distance is used (ie. based on which wavelength-associated resolution values).
* Uses different formulas for spatial resolution (formula is indicated in the final section of the report).
* Lateral & axial ISO21073 co-registration accuracy are computed
* Advanced report parameters are introduced:
* Possibility to highlight outside specs measurements
* Full control on produced data (pdf, excel files and analysis images).
* Setup information (including acquisition date read from metadata) is provided
* Analysis parameters are listed for the sake of traceability
* A batch mode is provided. All analysed images should have the same number of channels (and are supposed to have the same excitation/emission wavelength specs).

**CAMERA NOISE**

V 1.1.3

* Identification of abnormal pixels uses multiple threads now
* The scale bar of the abnormal pixels map is corrected and expressed in %
* If no abnormal pixels are found, the scale bar is not displayed and the distribution table shows a “none found message”.
* Introduces the possibility to artificially fix the dynamic range of the noise map to 0-6e-

V 1.1.2

* Single channel or multiple channels inputs (if multiple camera setups)
* Noise metrics (offset, DSNU, median and rms noise)
* Detection of warm, cold and hot pixels, distribution analysis and frequency analysis.
* Setup information (including acquisition date read from metadata) is provided
* Analysis parameters are listed for the sake of traceability

**Variation coefficient tool**

V1.1.3

* A swap dimension option allows on the fly generation of the correct, expected XZY or YZX view needed in the tool
* Fixes a bug in the ROI slider adjustements of the main dialog window

V 1.1.2 as compared to orginal metroloJ plugin:

* Uses multiple channel images (up to 7 channels/detectors). Use of single channel images is still possible.
* Saturated images can be discarded from analysis.
* Advanced report parameters are introduced (full control on produced data: pdf, excel files and analysis images).
* Setup information (including acquisition date read from metadata) is provided
* Analysis parameters are listed for the sake of traceability