Wimasis
Image Analysis

WimTaxis

Specifications for a successful analysis

In order to achieve the best results when using WimTaxis, these are some guidelines that you should follow while conducting your assay and acquiring images from it. If your images deviate from these guidelines, the accuracy of your WimTaxis analysis measurements might be negatively affected. Although we work our best to make our solution as adaptable as possible, we do not take responsibility of their accuracy if that is the case.

Please take care of your images, we will take care of the rest.

1. Before acquiring your images/videos

Valid microscopy modalities: WimTaxis only works with images/videos from fluorescence and phase contrast microscopy. If you want to analyze images from other modalities, you can ask for a custom solution here.

Moderate cell density: WimTaxis needs a cell density lower than 1/3 of the image area covered by them for proper detection of the background. Please take it into account when preparing your assay.

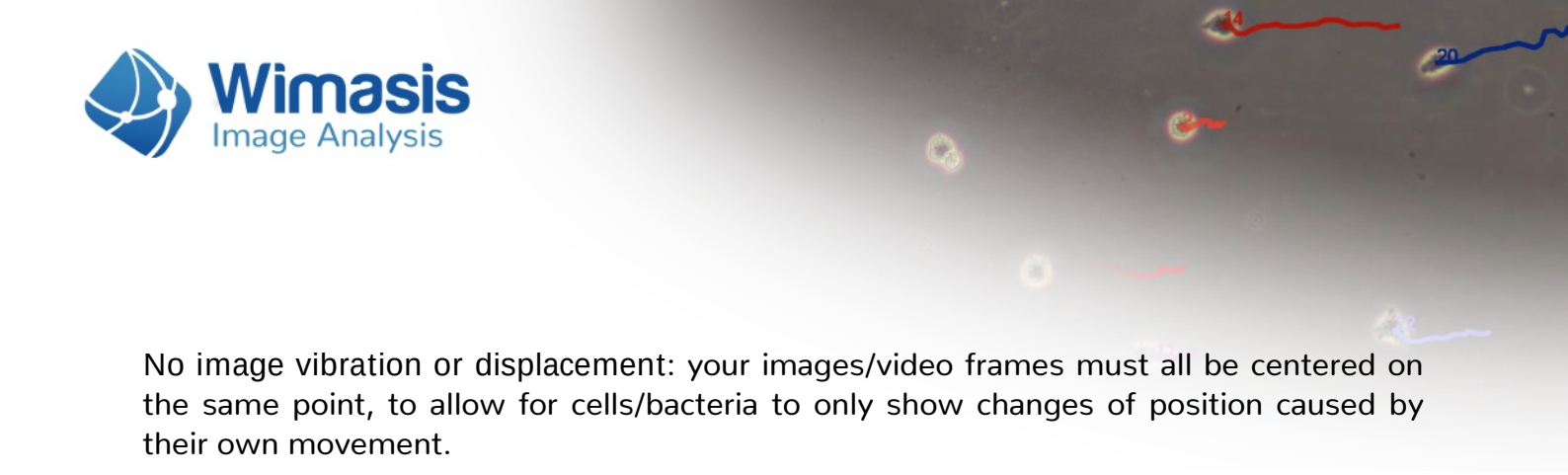
Only one cell/bacterium phenotype: WimTaxis only accepts time-lapse series showing one cell/bacterium phenotype. If you want to analyze videos with more than one phenotype, you can ask for a custom solution here.

Low division rate: a high cell/bacterium division rate can difficult the tracking of the newly divided cells. If your cells/bacteria show a fast division rate, please take your pictures/video frames with a time lapse short enough to show how cells divide so they can start to be tracked individually.

Avoid artifacts: any artifacts visible in the image (air bubbles, debris, stains...) may make it harder for the analysis to recognize your cells/bacteria and affect negatively your results. Please take care to avoid them when preparing your assay.

2. When acquiring your images/videos

Images in focus: images should be properly focused in order to allow cells/bacteria to be viewed with the best contrast and distinguish them from the background as clearly as possible.



No image vibration or displacement: your images/video frames must all be centered on the same point, to allow for cells/bacteria to only show changes of position caused by their own movement.

Homogeneous illumination: achieving homogeneous lightning throughout the entire image will ensure better results. Please avoid images in which some parts of the image are darker or brighter than others.

3. When saving your images/videos

Valid formats: WimTaxis works with time-lapse series of images, either organized in folders or saved as videos/image stacks. As such, we accept the following image formats:

* Image folders: jpg, jpeg, jp2, png, gif, tiff, tif and bmp formats
* Videos/stacks: avi, mpeg, mpg, mov, wmv and zvi formats

If you want to analyze images from a special image format, you can ask for a custom solution here.

Good image resolution: small images (low resolution) usually show small or poorly defined objects that are difficult to distinguish from the background. The minimum resolution that we accept is 800 pixels by 600 pixels.

No additional information visible on the image: some microscope software add information to the images like a scale bar or a time-stamp, which can make cells/bacteria around them more difficult to detect. Please send your images without any extra information on them.

Minimum/maximum number of frames: your series must have at least 10 video frames/images, WimTaxis will not analyze series with less than that number as there is not enough information to create a cell/bacterium track. Also, if your videos/image series show more than 250 frames, only the first 250 will be analyzed.

Frames per second ratio: the frames per second (fps) ratio has to fulfill the following condition:

$$\text{fps} \geq \frac{\text{Velocity of cell or bacterium}}{\text{Cell or bacterium diameter}}$$