

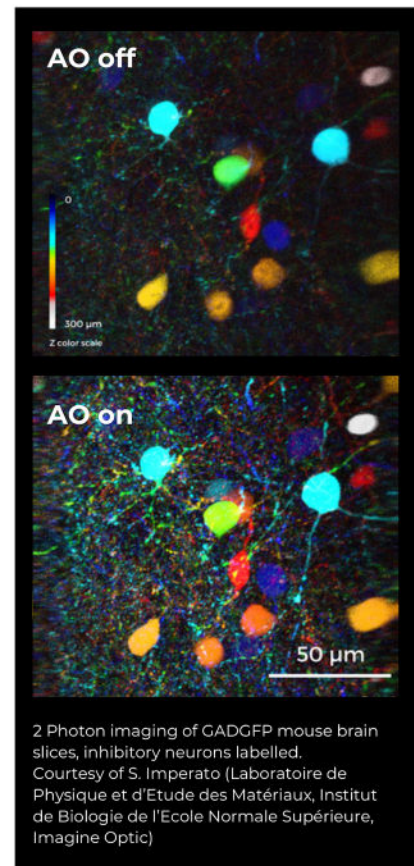
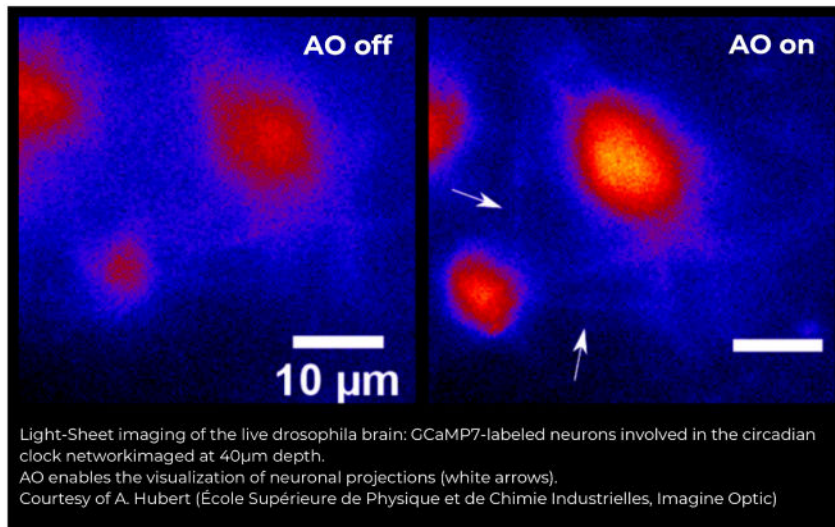


# Applications

## Implement on various set-ups :

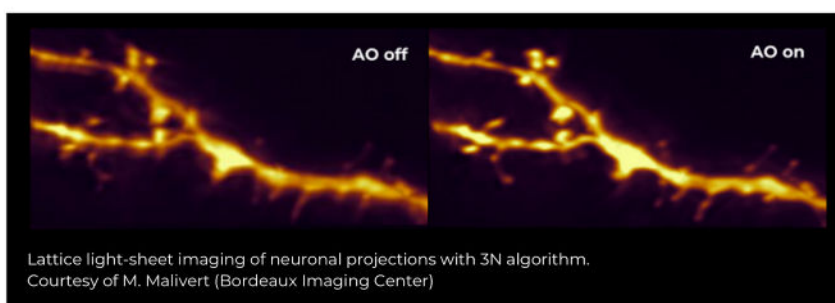
Being versatile, the AOKit Bio can be implemented for various microscopy techniques such as :

- Multiphoton
- Light-sheet
- Lattice Light-sheet
- PALM / STORM
- STED



# Advantages of AOKit Bio

- ✓ **Choose your elements** depending on your needs: AO loop can be integrated with different phase modulators, such as deformable mirrors or spatial light modulators (SLM)
- ✓ **Operate** in both closed and open loop modes
- ✓ **Save time** implementing your AO set-up thanks to Adaptive Optics software



**Boost your imaging performance :  
Adaptive Optics  
made  
easy and efficient.**

# Hardware combinations

## 1 Choose your mirror (or other SLM)



### mu-DM

Advised for :

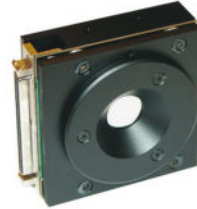
- ✓ High precision
- ✓ Open-loop
- ✓ Closed-loop



### MirAO regulated

Advised for :

- ✓ Open-loop
- ✓ Closed-loop



### MirAO

Advised for :

- ✓ Closed-loop

## 2 Select your wavefront sensor



### HASO4 FIRST

On demand  
wavelength between  
400 and 1100 nm



### HASO4 BROADBAND

Broadband  
wavelength range  
(from 350 to 1100 nm)

## 3 Choose your software

For easy and fast implementation, we recommend using WAVETUNE. This program controls all the elements with a simple user interface.

For implementation of aberration detection methods into home-built software, we also provide WAVEKIT Bio, the Software Development Kit (SDK).

More details about available software on the next page.

## Hardware combination examples :

### mu-DM

Number of actuators	91
Coating	Protected silver
Linearity	> 99.5%
Maximum generated wavefront (PV)	> 50 $\mu\text{m}$ on 7 actuators

### HASO4 BROADB.

Aperture dimension	6.9 x 5.1 mm <sup>2</sup>
Max. acquisition rate	125 Hz
Wavelength range	350-1100 nm
Wavefront measurement accuracy in absolute mode	$\lambda/100$ RMS

### Operating system

Windows 10

### MirAO

Number of actuators	52
Coating	
Linearity	> 95 %
Maximum generated wavefront (PV)	$\pm 50 \mu\text{m}$

### HASO4 FIRST

Aperture dimension	3.6 x 4.5 mm <sup>2</sup>
Max. acquisition rate	99 Hz
Wavelength range	400-1100 nm
Wavefront measurement accuracy in absolute mode	$\lambda/100$ RMS

### Operating system

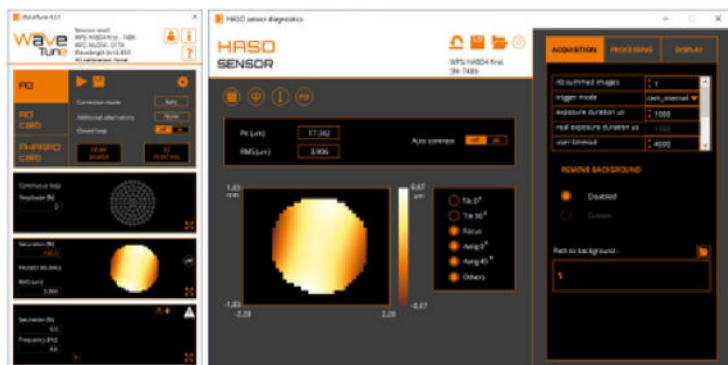
Windows 10



## Available AO software

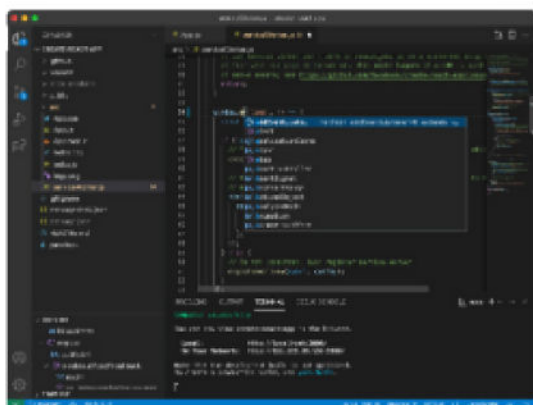
### WAVETUNE

WaveTune is a unique software that seamlessly combines wavefront measurement and correction features with extensive instrument diagnostics. This software contains all the necessary tools to calibrate the Deformable Mirror (DM). It can also operate the DM in closed-loop with HASO wavefront sensor, as well as in open-loop and perform beam shaping.



### WAVEKIT BIO

WaveKit Bio is a Software Development Kit (SDK), available in C++ and Python, specifically designed for microscopy applications. In particular, it contains all the necessary functions to implement sensorless AO, using image-based iterative algorithms (e.g. 3N).



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