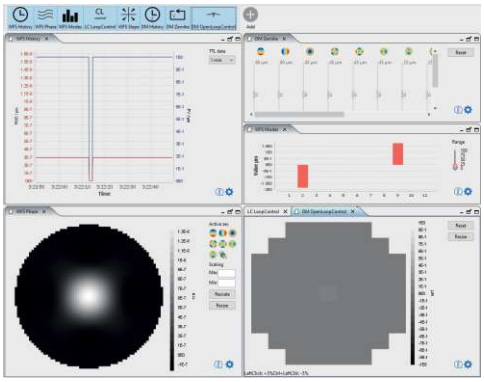
ALPAO AO KIT are adaptive optics systems composed of an **ALPAO DM**, an **ALPAO Shack-Hartman WFS** and **ALPAO** software **ACE** or **ALPAO RTC** (Real-Time Computer), all designed to perfectly work together. Over 100 kit configurations are possible.



Key features

KIT FOR EVERY APPLICATION

Ophtalmology, microscopy, laser, microelectronics...

CUSTOMIZE YOUR OWN KIT

Select your DM, WFS and software: more than 100 choices

COST EFFICIENT

Get a tested system and the telescope lenses for the price of the components

クロニクス株式会社

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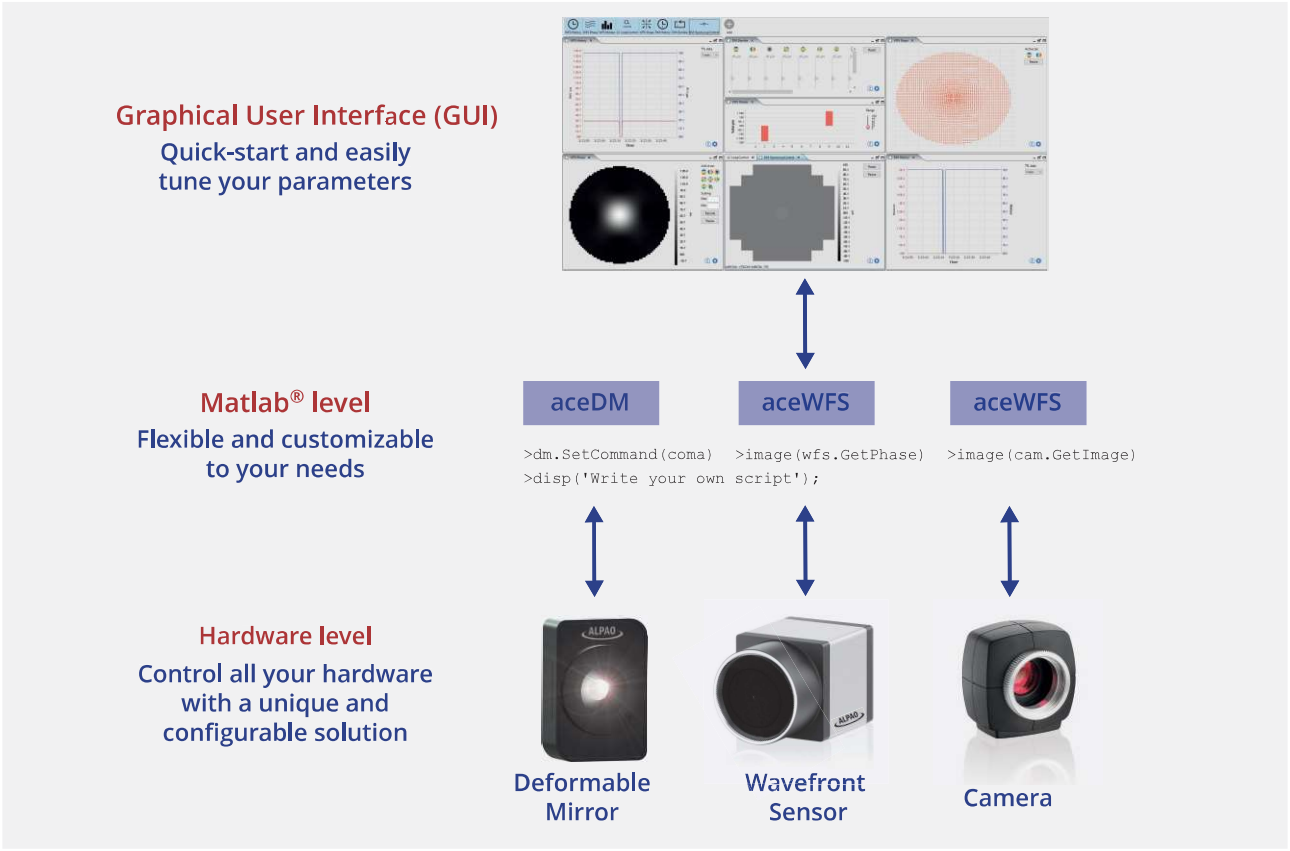
FLEXIBLE AND ERGONOMIC ARCHITECTURE

ACE is a powerful software architecture for adaptive optics. It is an object-oriented toolbox for MATLAB® that allows access to all your optoelectronic devices using built-in functions.
With ACE, you are certain that the system is tailored to your needs.



Download our tutorials! Try it now for free!

EASE OF USE AND PERFORMANCES

The ACE user-friendly graphical interface allows fine tuning and closing the loop in one click. ACE is also easy to learn with its convenient built-in documentation, which includes realistic examples.

With ACE, you can easily optimize your AO system to your needs. Automated experiments and advanced control set-ups are simple to develop. It is also possible to use ACE without wavefront sensor and to correct aberrations using iterative algorithms.

Depending on your hardware configuration, ACE enables closing an AO loop at up to 450Hz[1].

You are able to process your data in real-time and export the results, including displays and values, to a wide choice of file formats. ASCII, .xls, .tif, .jpg are among the many file options.

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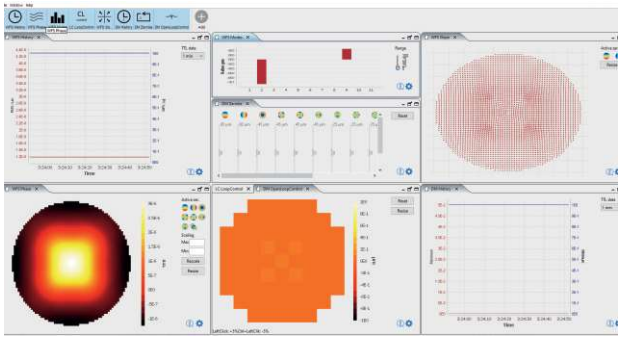
Note 1: Depending on computer and WFS.
Microsoft Windows, Linux, MathWorks, Labview, are registered trademarks.
Minimum configuration: MATLAB(r) 2017b 64-bit, Windows 10, 300 MB disk space, processor Intel or AMD x86-64 with four logical cores and AVX2 instruction set support, RAM 4096MB recommended (1024 minimum).
MATLAB® is not included in ACE and must be purchased separately.
ALPAO reserves right to change this document at any time without notice and disclaims liability for editorial pictorial or typographical errors.

FLEXIBLE AND ERGONOMIC INTERFACE

ACE graphical user interface is complete and intuitive. All the graphical charts, commands and graphical outputs can be arranged according to your needs.

ACE has been developped by optical engineers for optical engineers. Many features have been implemented to make AO always simpler and more powerful. For example, an alignement tutorial is included to save time during the first installation. A day/night skin has also been developped to allow our customer to easily work in a daytime or dark environment.



EASY INTEGRATION

Purchase a complete kit and benefit from an even easier integration!
For the price of the three components (DM, WFS and ACE software), ALPAO will provide you with a telescope adjusted to your kit.
Simply add your optical source, follow ACE alignment procedure and that's it : your first AO system is running ! Closing the loop has never been easier.

ALGORITHMS AND CONTROL

Both modal and zonal control are implemented into ACE. You can compare different control strategies and find out the one that suits best your application.

Iterative algorithms are also implemented into ACE. They are not only used in "sensorless" AO but also in non common path aberration correction. ACE includes a couple of examples of iterative algorithms. In any case, it will improve the shape of the DM based on your own metric.

Finally, you can also overwrite ACE functions. It will allow you to improve the performances of your setup and compare it to ACE performances.

ONE APPLICATION, ONE KIT

ALPAO kits allow to choose among 100 possible configurations. Pick up the right one depending on the performances you need: complexity and speed of aberrations, spectral range and number of photons available.

ALPAO DM97-15 associated with SH-CMOS WFS and ACE is an excellent cost-efficient kit. It performs corrections of up to 60 Zernike modes at a frequency of 100 Hz. Thanks to the flexibility of ACE, you will easily implement your kit into your experiment and correct your aberrations.

ALPAO best seller kit: DM97-15, SH-CMOS and ACE

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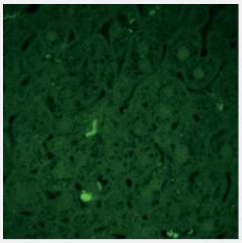
EXAMPLE OF CUSTOM DEVELOPMENT - FOR MICROSCOPY

Correction of the optical aberrations (from sample, index mismatch and microscope) becomes straight forward with the AOS-µ (ALPAO custom AO system for microscopy). This custom system includes:

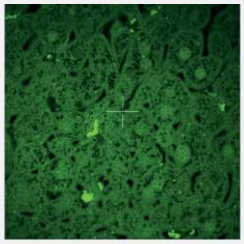
- ALPAO DM97-15
- user friendly, optimisation software
- an embedded pupil imaging camera
- a WFS
- an optical bypass.

Most optical microscopes can benefit from AO, including:

- Multi-photon microscopy
- Confocal microscopy
- PALM and STORM
- Widefield fluorescence microscopy.



Without AO System



With AO System

Example in microscopy: confocal images in depth of the tissues, transparent liver sample of mouse.
Credit: ConfoBright and Laurence Dubreil

ALPAO products can be integrated into most home-made and commercial microscopes by trained end-users.

Contact us for one-to-one guidance and technical support.

MORE INFORMATION

▶ www.alpao.com ▶ contact@alpao.fr ▶ +33 476 890 965

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