

Incoherent Digital Holographic Adaptive Optics

Researchers at the University of South Florida have developed a new optic system that measures and compensates aberrations in an optical imaging system.

Aberrations, such as atmospheric disturbances in astronomical imaging or optical distortions in microscopy, limit the achievable resolution of imaging systems. Conventional adaptive optics systems require a complex system of hardware components such as lenslet arrays and deformable mirrors, limiting the performance parameters and driving up the cost.

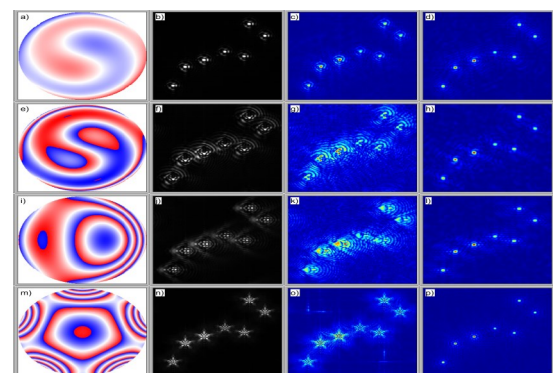
The new adaptive optics system can repair distortions and degradation of images caused by aberrations of the optical system or the medium between the object and the imaging system. The new system is capable of direct numerical access to and manipulation of the wavefront and the availability of efficient techniques for holography of incoherent sources.

The University of South Florida introduces the new technique of adaptive optics by digital holography, with potential applications from ophthalmic to astronomical imaging systems, remote sensing, fluorescence microscopy, and in many other general optical imaging applications.

ADVANTAGES:

- Simple Hardware
- Robust Image
- Efficient and Versatile
- Cost effective

Breakthrough In Adaptive Optics!



Assumed phase aberration, Assumed Image, Uncorrected hologram, corrected hologram (From Left to Right)

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