



Broadband Phase-Retrieval for Image-Based Wavefront Sensing

wavefront sensing portfolio

Description

This image-based wavefront sensing algorithm is capable of performing accurate phase retrieval (wavefront sensing) on broadband data sources without the need for narrow band spectral filters. This is an innovation among prior systems as narrow-band filters dramatically reduced signal level and increased detector integration times.

Features and Benefits

- This algorithm is capable of executing wavefront sensing operations on broadband data sources.
- Allows for a much simpler optical system setup than interferometer-based methods.
- Wavefront sensing latency can be significantly reduced by lifting the narrow band restriction.
- In some applications, spectral filters can be removed entirely, lowering system cost and complexity.

Applications

- Interferometry
- Astronomy
- Quality Control and Testing of Cameras and Optical Systems
- Mirror Surface Testing
- Laser Beam Output Verification

For More Information

If you are interested in more information or want to pursue transfer of this technology, GSC-14899-1, please contact:

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To view Goddard's entire portfolio of wavefront sensing technologies, please visit:
<http://ipp.gsfc.nasa.gov/wavefront>