



Direct Solve Image Based Wavefront Sensing

wavefront sensing portfolio

Description

Direct Solve Image Based Wavefront Sensing is an algorithm that computes the optical wavefront from a single in-focus image. The algorithm can use an image from a simple CCD or other camera device and then directly solves for the wavefront in less than a second on a single processor computer. It accomplishes this without the use of iterative algorithms or extra hardware, such as lab interferometers.

Features and Benefits

- This software tool saves both computer and personnel time.
- The Direct Solve method does not require any expensive interferometer equipment or technically complex and time consuming phase retrieval algorithms.
- The operating process is simple, as all that is required is to capture an in-focus image and then the software computes and displays the wavefront.
- No human interpretation of the results are required.

Applications

- Simplified Adaptive Optics Systems where closed loop technologies are too costly.
- Development and Testing of Optical Systems and Components
- Advanced Cameras
- Telescopes

For More Information

If you are interested in more information or want to pursue transfer of this technology, GSC-15208-1, please contact:

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