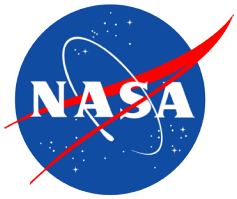

wavefront sensing markets and applications

Metrology:

Microscopy and Interferometry

Description

The Goddard Space Flight Center has developed a wealth of wavefront sensing technologies, algorithms, optical components and design, test and simulation tools that are highly applicable to the field of metrology. These technologies have been deployed on a number of NASA missions including the James Webb Space Telescope (JWST). Although originally designed for use in space-based adaptive optics applications, these technologies are highly applicable to the documented needs in microscopy and interferometry by providing enhanced wavefront sensing algorithms, design tools and optical components to improve optical clarity and resolution.

Markets & Applications

Microscopy

- Multi-photon Microscopes
- Confocal Microscopes
- Other Advanced Optical Microscopes

Interferometry

- Software-based Replacement for Expensive Hardware Interferometers
- Optical Coherence Tomography

wavefront sensing markets and applications

GSFC Technologies Available for License

Wavefront Detection Algorithms:

- **GSC-14879-1**, Iterative-Transform Phase-Retrieval Utilizing Adaptive Diversity
- **GSC-14899-1**, Broadband Phase-Retrieval for Image-Based Wavefront Sensing
- **GSC-14900-1**, Filter Function For Wavefront Sensing & Control Over An Extended Field Of View
- **GSC-15208-1**, Direct Solve Image Based Wavefront Sensing
- **GSC-15464-1**, PseudoDiversity - Direct Wavefront Control and Image Restoration at High Bandwidth
- **GSC-15693-1**, Variable Sampling Mapping
- **GSC-15963-1**, Iterative Transform Phase Diversity

System Operating Software:

- **GSC-14725-1**, Wavefront Sensing And Optical Control Software (WSOC)
- **GSC-15399-1**, James Webb Space Telescope (JWST) Wavefront Sensing Software

Lenses, Gratings & Mirrors:

- **GSC-15679-1**, Adaptable Gratings with Wavefront Transformation Functionality
- **GSC-15680-1**, Focusing Diffraction Gratings
- **GSC-16008-1**, Phase Controlled Magnetic Mirror for Wavefront Correction

System Design Simulation & Testing Tools:

- **GSC-15138-1**, Matlab-OSLO Toolkit
- **GSC-15151-1**, Matlab-Zemax Toolkit
- **GSC-15567-1**, Wavefront Control and Optimization Toolbox
- **GSC-15676-1**, Computer Generated Hologram System for Wavefront Measurement System Calibration

For More Information

If you are interested in more information or want to pursue transfer of technologies suited to this market, please contact:

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