

## A Method for Latency Reduction in Optical Phase Correction

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**Categories:**

- Computer Technology

**Keywords:**

- 3D Imaging
- aerospace
- Algorithm
- Computer Technology
- Computer Vision
- Defense/Space
- Holograms
- Imaging
- Lightwaves
- Military
- Photography
- Waveforms
- Wavefront Shaping Method
- Waves

Researchers at Purdue University have developed a new method to reduce latency in algorithms that estimate wave-front phase error. These algorithms can be used to characterize incoming and outgoing electromagnetic wavefronts to create sharp digital images. In optical light focusing applications such as astrophysical studies and holography, sources of blurry images must be identified and corrected. Phase errors contribute to image quality and can occur from delays in computations and measurements but are potentially avoidable. The algorithms fine-tuned by Purdue researchers can eliminate latency and predict future phase errors with higher precision and improved reliability over traditional multiplane image-sharpening algorithms.

**Advantages:**

- Accurate
- Produces Sharp Images
- Enables Corrections to Wave-Front Energy

**Potential Applications:**

- Astrophysical Studies
- Holographic Displays

-Military and Defense

**People:**

- Bouman Jr., Charles Addison (Project leader)
- Kisner, Sherman Jordan

**Intellectual Property:**

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