

# Optomechanical Analysis Services

At Sigmadyne, we are experts in the integration of mechanical and optical analysis, linking the flow of analysis so that optical performance predictions include the effect of mechanical disturbances.

Our clients' primary concerns are often degradations of optical performance of their products resulting from statically or dynamically induced deformations of optical surfaces or the change of refractive properties due to the effects of temperature and stress.

Our specialized skills and proprietary tools allow us to effectively transfer the results of mechanical analyses to clients' optical analysis models, and conduct efficient performance trade studies and design optimizations to improve product performance and reliability. We also provide superior simulation of actively controlled optics, test-to-analysis correlation, actuator placement optimization and Monte Carlo variational studies.

We are experts at finite element analysis (FEA), especially as applied to precision optical systems. Our experience spans much of the photonics industry, including aerospace, astronomy, optical communications, LIDAR, projection, microlithography and medical.

## Sigmadyne Analysis Services

### Applications

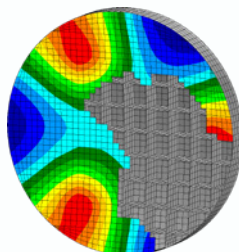
- Laser systems
- Remote sensing
- Astronomy
- Test supports
- Microlithography
- Concentrated solar power
- Optical communications
- Optical implants and eyewear
- Entertainment imaging
- Office imaging
- Optical manufacturing

### Optomechanical disturbances

- Temperature changes
- Gravity orientation changes
- Assembly induced strain
- Vibration
- Polishing pressure

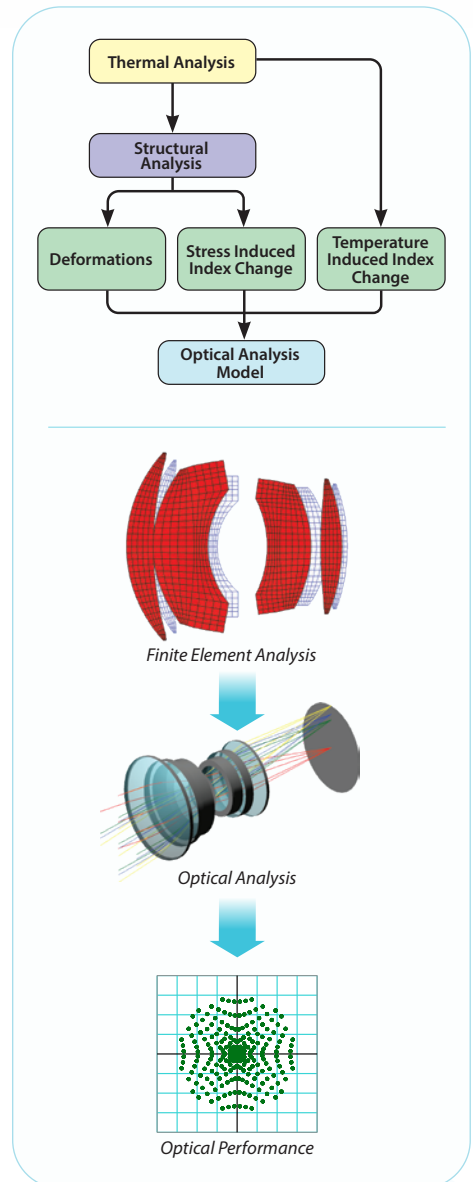
### Hardware

- Telescope systems
- Lens assemblies
- Active optics
- Lightweight mirrors
- Adhesive optical bonds
- Flexured optical mounts
- Metering structures
- Optical benches



Gravity Induced Deformation of a Lightweight Mirror

## INTEGRATION OF MECHANICAL AND OPTICAL ANALYSIS



► Call 585.235.7460 or 585.235.6892 to speak with our engineers about solving your problem. Visit [sigmadyne.com](http://sigmadyne.com) for white papers and information on our products and services.

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