

Optomechanical Analysis Services

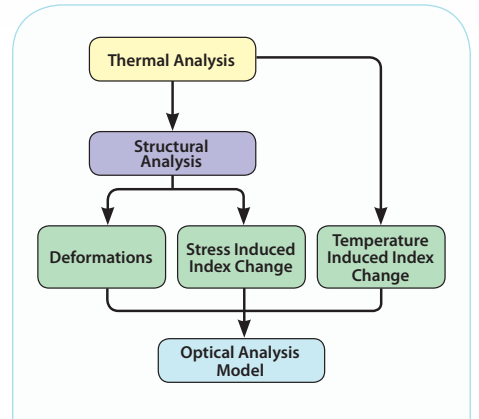
At Sigmadyne, we are unique in our ability to integrate mechanical analysis and optical analysis, linking the flow of analysis predictions so that optical performance predictions include the effect of mechanical disturbances.

Our clients' primary concerns are often related to the impact on optical performance of their products due to statically or dynamically induced deformations of optical surfaces, or, in the case of transmissive optics, 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 adaptively 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, microlithography and medical.

INTEGRATION OF MECHANICAL AND OPTICAL ANALYSIS



Sigmadyne Analysis Services

Applications

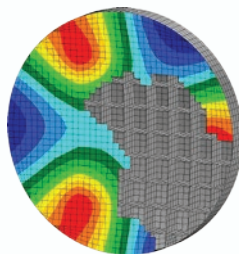
- Laser systems
- Remote sensing
- Astronomy
- Test supports
- Microlithography
- Concentrated solar power
- Optical communications
- Optical implants and eyewear
- Entertainment imaging
- Office imaging
- Optical manufacturing

Optomechanical disturbances

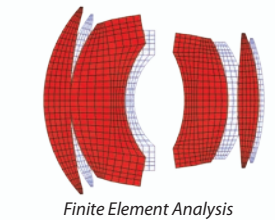
- Temperature changes
- Gravity orientation changes
- Assembly induced strain
- Vibration
- Polishing pressure

Hardware

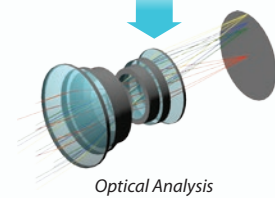
- Telescope systems
- Lens assemblies
- Adaptive optics
- Lightweight mirrors
- Adhesive optical bonds
- Flexured optical mounts
- Metering structures
- Optical benches



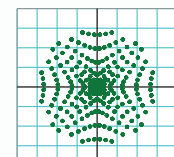
Gravity Induced Deformation of a Lightweight Mirror



Finite Element Analysis



Optical Analysis



Optical Performance

► Call 585.235.7460 or 585.235.6892 to speak with our engineers about solving your problem. Visit www.sigmadyne.com for white papers and information on our products and services.

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