



Design for manufacturing of spaceborne mirrors

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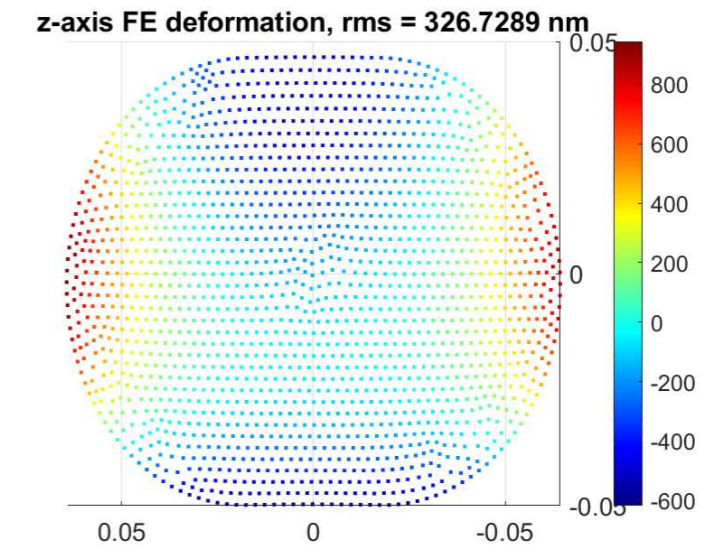


Manufacturing criticalities

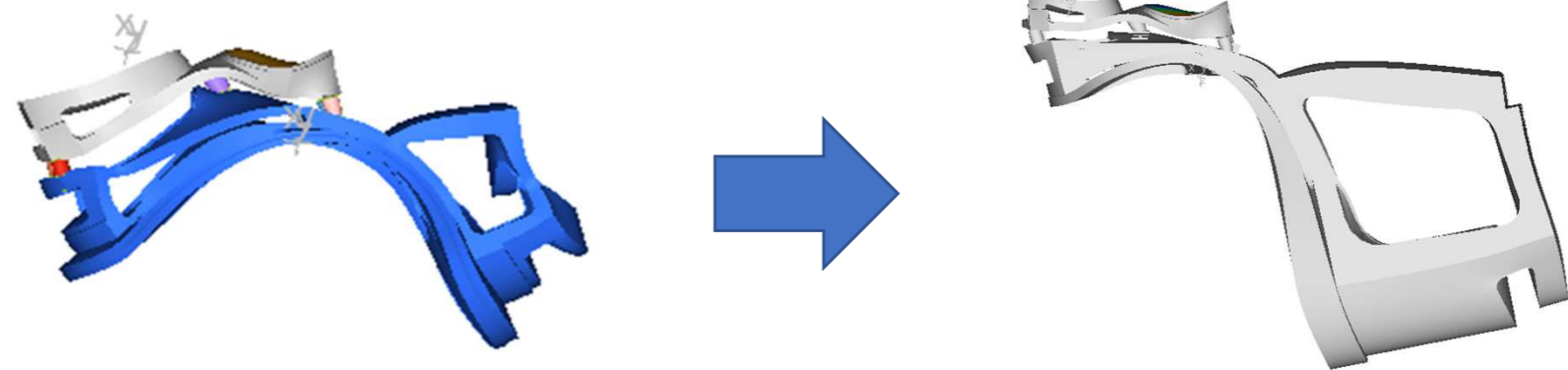
- Stringent **mass and resonance frequency** requirements
- Cleanliness requirements
- Wide range of **environmental conditions**:
 - During production phases
 - Gravity 1g
 - Ambient temperature
 - Ambient pressure
 - During operations
 - Zero gravity
 - Cryogenic temperatures
 - Vacuum
 - Exposure to radiation
- Extremely demanding **shape and roughness requirements** (nanometers)
- **Limited knowledge** of cutting forces

PhD objective

Create a **predictive model** of the result of the machining taking into account of all loads and constraints acting on the process.



Define appropriate countermeasures to take into account of such behaviour.



Define a procedure to obtain an in-spec product with the least amount of iterations.

**Thus reducing time and costs of the
manufacturing operations.**

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