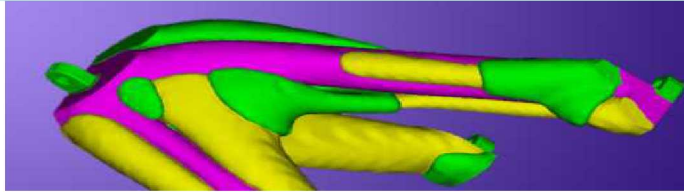
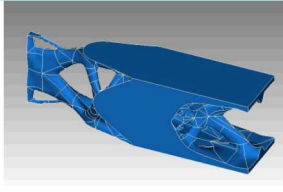
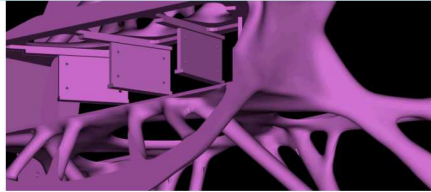


Plato Technologies

plato
OPTIMIZATION-BASED DESIGN



PRESENTED BY

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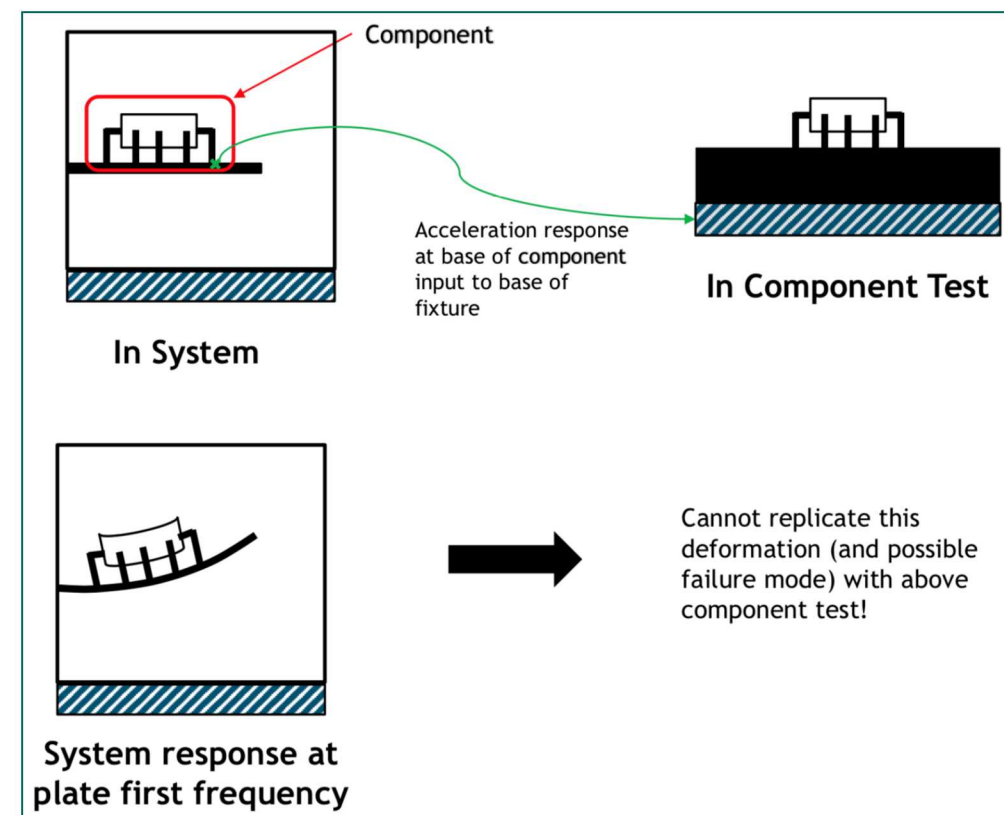
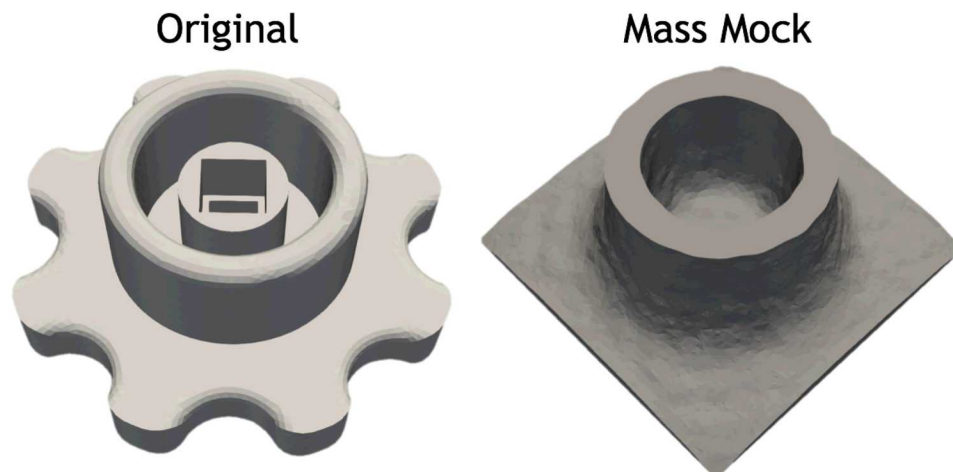
Dynamic and Mass “Tuning”

Goal: Generate designs “tuned” for desirable dynamic and mass properties.

Target Applications: Test fixture design, mass mock design

Example objectives

- Raise first natural frequency
- Ensure natural frequencies avoid specific frequency bands
- Match a given set of modes and mode shapes
- Match a given set of mass properties (mass, CG, moments of inertia)



Test Fixture Dilemma

Multi-physics Heat Sink Design

Goal: Generate optimized heat sinks taking into consideration thermal, fluid, and structural effects.

Target Application: Heat sinks for satellite applications

Current Drivers/Leveraging

- Potential NASA engagement (in proposal stage)
- DARPA solid rocket fuel challenge problem that requires similar physics
- Internal satellite applications

Enabling Technologies

- Level-set topology optimization for accurate BCs
- Immersed geometry representation (XTK from CU Boulder)
- GPU-based physics for multi-physics performance

