

Technische Universität München

BGCE Project: CAD – Integrated Topology Optimization

BGCE Final Milestone Meeting

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Contents

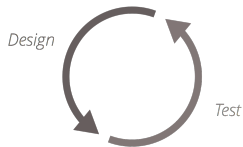
1. Product Presentation

2. Introduction

2.1 Product Presentation

Motivation

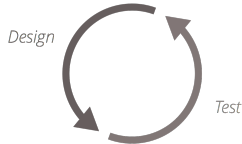
Current Design Process:



- Iterative and redundant
- Time consuming

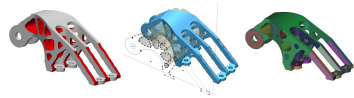
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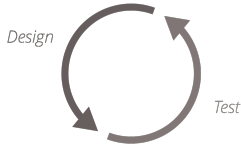
Topology optimization



- Promoted by additive manufacturing

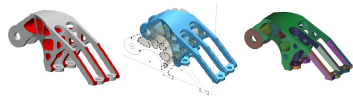
Motivation

Current Design Process:



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Topology optimization



- Promoted by additive manufacturing

Focus:

Convert optimized geometry to **lightweight** and **scalable** CAD formats

CAD issues

Problem:

- The Engineer designer pendulum

Desired:

⇒ One click optimization

CAD issues

Problem:

- The Engineer designer pendulum
- Top-Opt algorithms are a one way street

Desired:

- ⇒ One click optimization
- ⇒ A full circle optimization process

CAD issues

Problem:

- The Engineer designer pendulum
- Top-Opt algorithms are a one way street
- Exotic input file types

Desired:

- ⇒ One click optimization
- ⇒ A full circle optimization process
- ⇒ Standardized input files

What they get

- One-step solution process
- Full 3-D optimization via Finite Elements
- Production-ready output geometry

DEMO

Scalability and Performance