



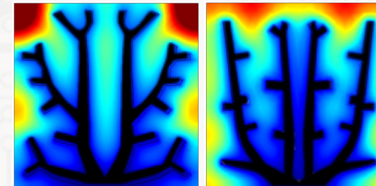
- Design optimization of large-scale dynamic systems
- Integrated physical and control system design
- System architecture and topology design optimization

<http://systemdesign.illinois.edu>

Generative design abstraction:

- Design for additive manufacturing
- Manage new levels of design complexity

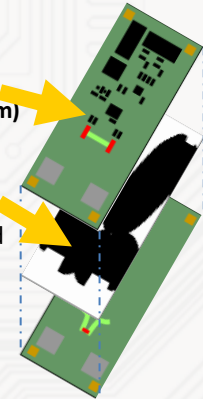
Generative design of thermal systems:
SIMP Method Generative Design



Circuit Architecture
(Heterogeneous System)

Heat Spreader
(Continuum System)

Combined continuum and heterogeneous system topology optimization

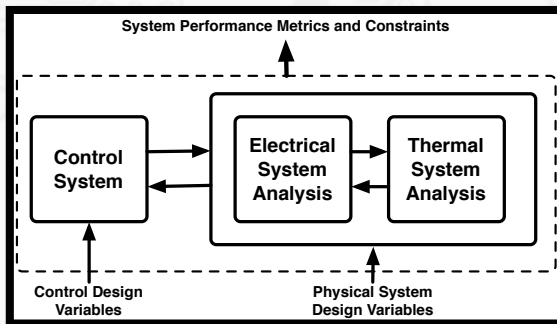


Generative Design Methods for Topology and System Architecture Optimization

Rigorous design theory and tools for understanding and capitalizing on synergy between interfaces

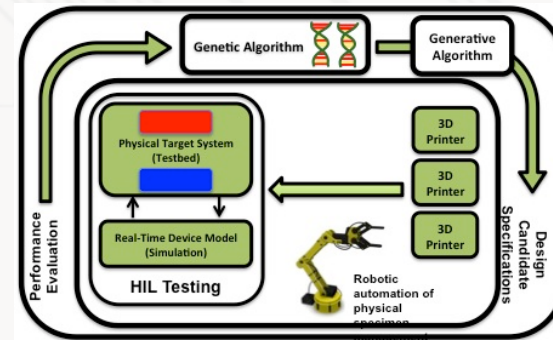
Multidisciplinary Integrated System Design

Experiment-in-the-Loop Design Optimization



New levels of integration and performance for mechatronic systems:

- Electric drives/HEVs
- Intelligent structures
- Spacecraft design
- Wind/wave energy
- Robotic systems
- Hydraulic power sys



Leverage additive manufacturing to accelerate design of complex systems