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Special Issue Reprint

Advanced Topology Optimization

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This Reprint presents a curated collection of peer reviewed articles from the Special Issue Advanced Topology Optimization: Methods and Applications published in the journal *Computation*. It provides an up-to-date overview of recent progress in topology optimization, a computational design methodology that determines optimal material distributions for high performance engineering structures and systems.

The contributions in this Reprint reflect the growing maturity of the field and its transition from theoretical development toward practical engineering implementation. The included studies address key topics such as manufacturing aware design, CAD ready structural representation, computational efficiency, and the treatment of multi physics and dynamic problems. Together, they demonstrate how modern topology optimization frameworks are being adapted to meet realistic engineering constraints and industrial design requirements. Covering both methodological advances and application-oriented research, this Reprint highlights current trends that bridge optimization theory with manufacturable and deployable solutions. It serves as a valuable reference for researchers, graduate students, and practicing engineers working in structural optimization, computational mechanics, and advanced engineering design.

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