

Special Issue

New Insights into Multidisciplinary Design Optimization

Message from the Guest Editors

In the field of complex system engineering (e.g. aerospace, automotive, energy, civil engineering), designers must manage increasingly challenging requirements. System specifications are narrowing due to factors such as safety regulations, environmental constraints, and cost considerations. Development timelines are contracting, and the imperative to establish system performance quickly and with sufficient accuracy adds another layer of complexity. The design of complex systems involves a multidisciplinary process that couples various domains, including aerodynamics, propulsion, structures, electric/hydraulic systems, and guidance, navigation, and control. Each of these areas encompasses distinct groups of highly skilled experts and relies on advanced high-fidelity simulation models. To face these challenges, multidisciplinary design optimization has become a standard for apprehending the complexity of process design. This Special Issue focuses on diverse areas, including advancements in surrogate modeling, multidisciplinary design analysis and optimization, uncertainty quantification, dimension reduction, multifidelity modeling, and machine learning.

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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