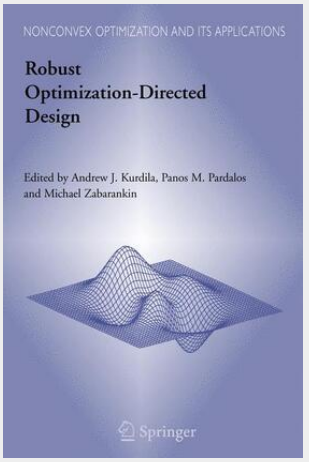
Kurdila / Zabarankin / Pardalos

Robust Optimization-Directed Design



Robust design—that is, managing design uncertainties such as model uncertainty or parametric uncertainty—is the often unpleasant issue crucial in much multidisciplinary optimal design work. Recently, there has been enormous practical interest in strategies for applying optimization tools to the development of robust solutions and designs in several areas, including aerodynamics, the integration of sensing (e.g., laser radars, vision-based systems, and millimeter-wave radars) and control, cooperative control with poorly modeled uncertainty, cascading failures in military and civilian applications, multi-mode seekers/sensor fusion, and data association problems and tracking systems. The contributions to this book explore these different strategies. The expression "optimization-directed" in this book's title is meant to suggest that the focus is not agonizing over whether optimization strategies identify a true global optimum, but rather whether these strategies make significant design improvements.

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