

Stability and Optimization of Structures

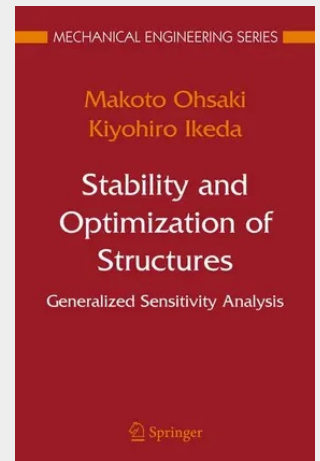
Generalized Sensitivity Analysis

is the first book to address issues of structural optimization against nonlinear buckling. Through the investigation of imperfection sensitivity, worst imperfection and random imperfection based on concrete theoretical framework, it is shown that optimization against buckling does not necessarily produce an imperfection-sensitive structure.

This book offers the reader greater insight into optimization-based and computer-assisted stability design of finite-dimensional structures. Using the unified approach to parameter sensitivity analysis, it connects studies of elastic stability, computational mechanics and applied mathematics. Optimization based on stability theory is presented and explained, with 140 figures to illustrate applications in the framework of finite element analysis.

This book serves as an illustrative introduction for professional structural and mechanical engineers, graduate students in engineering, as well as applied mathematicians in the field.

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