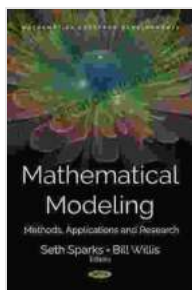# Nonlinear Optimization Models And Applications Textbooks In Mathematics

Nonlinear Optimization Models And Applications Textbooks In Mathematics is a comprehensive and authoritative treatment of nonlinear optimization models and their applications in various fields. The book covers a wide range of topics, including convex optimization, nonlinear programming, and variational inequalities. The book is written in a clear and concise style, and it contains numerous examples and exercises to help the reader understand the material.

Nonlinear Optimization: Models and Applications (Textbooks in Mathematics)

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Language   : English
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Print length   : 416 pages

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    -   Convex Optimization

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Convex Optimization

Convex optimization is a branch of mathematics that deals with the optimization of convex functions. Convex functions are functions that have a non-negative second derivative. Convex optimization problems are typically easier to solve than non-convex optimization problems, and they have a wide range of applications in various fields, such as finance, engineering, and operations research.

Nonlinear Programming

Nonlinear programming is a branch of mathematics that deals with the optimization of nonlinear functions. Nonlinear functions are functions that do not have a linear relationship between their inputs and outputs. Nonlinear programming problems are typically more difficult to solve than convex optimization problems, but they have a wider range of applications in various fields, such as chemical engineering, mechanical engineering, and economics.

Variational Inequalities

Variational inequalities are a branch of mathematics that deals with the optimization of functions that are defined on a set. Variational inequalities are typically used to model problems in which the constraints are not linear. Variational inequality problems are typically more difficult to solve than convex optimization problems, but they have a wide range of applications in various fields, such as fluid mechanics, heat transfer, and elasticity.

Applications

Nonlinear optimization models have a wide range of applications in various fields, such as:

- Finance

- Engineering

- Operations research

- Chemical engineering

- Mechanical engineering

- Economics

- Fluid mechanics

- Heat transfer

- Elasticity

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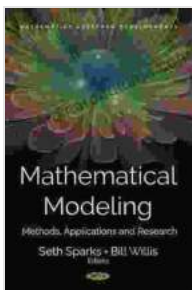
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