

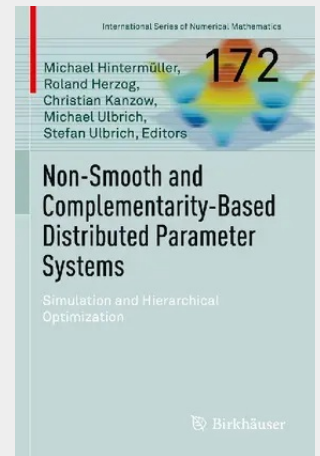
Non-Smooth and Complementarity-Based Distributed Parameter Systems

Simulation and Hierarchical Optimization

Many of the most challenging problems in the applied sciences involve non-differentiable structures as well as partial differential operators, thus leading to non-smooth distributed parameter systems. This edited volume aims to establish a theoretical and numerical foundation and develop new algorithmic paradigms for the treatment of non-smooth phenomena and associated parameter influences. Other goals include the realization and further advancement of these concepts in the context of robust and hierarchical optimization, partial differential games, and nonlinear partial differential complementarity problems, as well as their validation in the context of complex applications. Areas for which applications are considered include optimal control of multiphase fluids and of superconductors, image processing, thermoforming, and the formation of rivers and networks.

Chapters are written by leading researchers and present results obtained in the first funding phase of the DFG Special Priority Program on Nonsmooth and Complementarity Based Distributed Parameter Systems: Simulation and Hierarchical Optimization that ran from 2016 to 2019.

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