

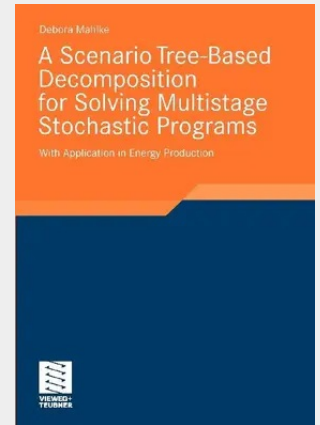
A Scenario Tree-Based Decomposition for Solving Multistage Stochastic Programs

With Application in Energy Production

Optimization problems involving uncertain data arise in many areas of industrial and economic applications. Stochastic programming provides a useful framework for modeling and solving optimization problems for which a probability distribution of the unknown parameters is available.

Motivated by practical optimization problems occurring in energy systems with regenerative energy supply, Debora Mahlke formulates and analyzes multistage stochastic mixed-integer models. For their solution, the author proposes a novel decomposition approach which relies on the concept of splitting the underlying scenario tree into subtrees. Based on the formulated models from energy production, the algorithm is computationally investigated and the numerical results are discussed.

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