TWO-PHASE SIMULATION OPTIMISATION PROCEDURE WITH APPLICATIONS TO MULTI-ECHELON CYCLIC PLANNING

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ABSTRACT
This paper describes a two-phase simulation-based optimisation procedure that integrates the Genetic Algorithm and Response Surface-based Linear Search algorithm for developing optimal power-of-two replenishment policy in multi-echelon environment during the maturity phase of the life cycle of a product. The problem involves a search in high dimensional space with different ranges for decision variables scales, multiple objective functions and problem specific constraints, such as power-of-two and nested/inverted-nested planning policies. The paper provides illustrative example of the two-phase optimisation procedure applied to generic supply chain network.

Keywords: multi-echelon cyclic planning, genetic algorithm, response surface-based linear search
REFERENCES


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