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# Simulation Optimization for the Stochastic Economic Lot Scheduling Problem with Sequence-Dependent Setup Times

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We consider the stochastic economic lot scheduling problem (SELSP) with lost sales and random demand, where switching between products is subject to sequence-dependent setup times. We propose a solution based on simulation optimization using an iterative two-step procedure which combines global policy search with local search heuristics for the traveling salesman sequencing subproblem. To optimize the production cycle, we compare two criteria: minimizing total setup times and evenly distributing setups to obtain a more regular production cycle. Based on a numerical study, we find that a policy with a balanced production cycle leads to lower cost than other policies with unbalanced cycles.

**Keywords:** Inventory, Multi-Product, Lot-Sizing and Scheduling, Stochastic Demand, Sequence-Dependent Setups, Simulation Optimization

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