

Progressive Hedging as a Heuristic with Exact or Heuristic Solvers

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Many important problems can be formulated as multistage stochastic integer programs [3]. Most of the real world examples to date have come from finance and energy, but we will discuss some applications in inventory and production planning in this talk.

Although originally conceived as an exact method, progressive hedging [2] can be also be used as a metaheuristic. Furthermore, the subproblems can be addressed with an exact method [4] or metaheuristics [1]. In fact, for progressive hedging subproblems branch and bound is often terminated early, so it is serving as a heuristic as well. Furthermore, commercial branch and bound algorithms incorporate heuristics. The point is: the lines between exact methods and heuristics are blurry for many optimization algorithms, and this is very much the case for progressive hedging in the implementations that we will review in this talk. We will also present some new results for a large inventory planning problem.

References

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