Scenario Decomposition of Stochastic 0-1 Problems

We present a scenario decomposition algorithm for stochastic 0-1 programs. The algorithm recovers an optimal solution by iteratively exploring and cutting-off candidate solutions obtained from solving scenario subproblems. The scheme is applicable to quite general problem structures and can be implemented in a distributed framework. We provide a theoretical justification of the effectiveness of the proposed scheme. Illustrative computational results demonstrating near linear parallel speedup on standard test instances are presented.

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