

Decomposition method for the Multiperiod Blending Problem

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March 12, 2014

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Motivation and goals

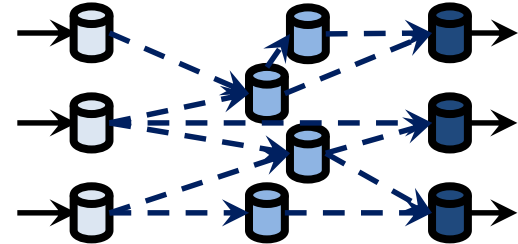
Description

Motivation

Multiperiod blending is a general problem for many applications, and it is difficult to solve

- Gasoline and crude oil blending are some of the applications
- The model contains mixed-integer variables and bilinear constraints

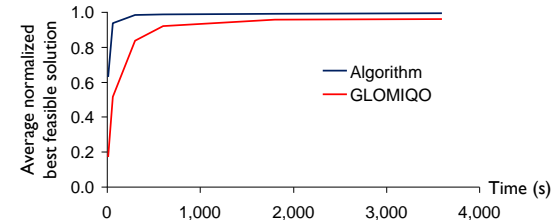
Illustration



Goals

Generate “good solutions” fast

- Guaranteeing global optimality is not a priority
- Solutions must be feasible



Approach

Decompose the problem to simplify search for feasible solutions

- A master MILP relaxation of the problem “fixes” some tanks as “split tanks”
- MINLP subproblem contains fewer binary variables and bilinear terms

