
# A precision pump schedule optimization for the water supply networks with small buffers

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## Highlights

- We proposed a precision pump schedule optimization model which is hydraulically accurate.
- Based on the hydraulic relaxation, we proposed the well-established two-phase solution method.
- We identified the smoothing constraints of pump operation and solved this problem using shortest path formulation.
- The proposed method achieved an energy-cost saving of 5.9 % on average and the computation time suitable for unit periods as short as 15 min.