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A Review And Computational Comparison Of Derivative-free Methods For Bound-constrained Mixed-integer Optimization

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Abstract:

In this work, we review algorithms that solve bound-constrained mixed-integer optimization problems and present a computational study of available implementations of these algorithms on a large collection of problems. Thirteen bound-constrained mixed-integer derivative-free optimization solvers are compared using a test set of 188 problems. The testbed includes pure integer and mixed-integer problems. Computational results show that the ability of all these solvers to obtain good solutions diminishes with increasing problem size, but the solvers evaluated collectively found optimal solutions for 81% of the problems in our test set.

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Topic (Complete): Discrete Optimization ; Global Optimization ; Integer Programming

Additional Information (Complete):

Practice related?: No

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