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**A D. C. optimization algorithm for solving the trust-region subproblem.** (English)

Zbl 0913.65054

SIAM J. Optim. 8, No. 2, 476-505 (1998).

The authors consider the optimization problem

$$g(x) - h(x) \rightarrow \inf_{x \in \mathbb{R}^n},$$

where the functions  $g$  and  $h$  are convex. For this d.c. optimization problem, the authors give duality, local and global optimization conditions and a numerical algorithm. The given algorithm is applied for the solution of a trust-region problem of the form

$$\frac{1}{2} \cdot x^T \cdot A \cdot x + b^T \cdot x \rightarrow \inf_{\|x\| \leq r}.$$

Numerical experiments are given and relations to the Goldstein-Levitin-Polyak gradient projection algorithm in the convex case are discussed.

Reviewer: [H.Benker \(Merseburg\)](#)

**MSC:**

[65K05](#) Numerical mathematical programming methods

[90C26](#) Nonconvex programming, global optimization

Cited in **4** Reviews

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d.c. optimization; d.c. duality; global and local optimality conditions; regularization techniques; DCA; Lanczos method; trust-region subproblem; numerical experiments; Goldstein-Levitin-Polyak gradient projection algorithm

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