ERRATA CORRIGE

On an Optimality Condition in DC Optimization

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Abstract. We take care of an omission in Proposition 4.4 of Ref. 1.

Key Words. DC functions, DC programming, global optimization, nonconvex programming, optimality conditions.

In Ref. 1, Proposition 4.4, an optimality condition for the following DC programming problem was established:

$$\omega^* = \inf\{f(x) - h(x) : x \in X\}, \quad (1)$$

where g and h are two convex functions on $\mathbb{R}^n$ and where X is a closed convex subset on $\mathbb{R}^n$. There is an error in the formulation of Proposition 4.4. The correct proposition reads as follows.

Proposition 4.4. Assume that Problem (1) is solvable. Then, a point $x^* \in X$ is an optimal solution to it if and only if there is $t^* \in \mathbb{R}$ such that (x^*, t^*) solves the problem

$$0 = \inf\{-h(x) + t : x \in X, t \in \mathbb{R}, g(x) - t \leq g(x^*) - t^*\}. \quad (2)$$

In the old formulation, the words “ (x^*, t^*) solves the problem” were missing. Obviously, this proposition cannot be correct without these words. Notice that the proofs given in Refs. 1 and 2 refer to the above correct formulation.

References

1. HORST, R., and THOAI, N. V., *DC Programming: Overview*, Journal of Optimization Theory and Applications, Vol. 103, pp. 1–43, 1999.
2. THOAI, N. V., *On Tichonov's Reciprocity Principle and Optimality Conditions in DC Optimization*, Journal of Mathematical Analysis and Applications, Vol. 25, pp. 673–678, 1998.

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