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## INVESTIGATION OF SELECTION STRATEGIES IN BRANCH AND BOUND ALGORITHM WITH SIMPLICIAL PARTITIONS AND COMBINATION OF LIPSCHITZ BOUNDS

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One class of global optimization methods is Lipschitz optimization. A multivariate function  $f: D \to R, D \subset \mathbb{R}^n$  is said to be Lipschitz if it satisfies the condition

$$|f(x) - f(y)| \le L ||x - y||, \quad \forall x, y \in D,$$

where L > 0 is a constant called Lipschitz constant, the domain D is compact and  $\|\cdot\|$  denotes the norm.

Branch and bound algorithms with rectangular or simplicial partitions and computationally cheap but rather crude lower bounds are used in most methods for multivariate unconstrained Lipschitz optimization of problems with dimension greater than two.

In the algorithm under consideration we use simplicial partitions and a combination of two types of Lipschitz bounds. The first type is improved Lipschitz bound with the first norm, where the graph of the upper bounding function is intersection of *n*-dimensional pyramids and its maximum is found solving a system of linear equations [3]. The other type is a combination of simple bounds with different norms [2].

The algorithm is implemented using a branch and bound template [1]. Specific rules of the algorithm are described while a common structure is implemented in the template.

Performance of the algorithm with different selection strategies (best first, depth first, breadth first, statistical) has been investigated experimentally solving multidimensional test problems for global optimization.

## REFERENCES

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