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**Interval methods.** (English) [Zbl 0832.90109](#)

Horst, Reiner et al., Handbook of global optimization. Dordrecht: Kluwer Academic Publishers. Nonconvex Optim. Appl. 2, 751-828 (1995).

Summary: An introduction to the interval arithmetic tools and basic methods that can be used to solve global optimization problems are presented. These tools are applicable both to unconstrained and constrained as well as to nonsmooth optimization or to problems over unbounded domains. We also emphasize the role of bisections and attempts to find the right bisections when solving the problem computationally since almost all interval based global optimization algorithms use branch-and-bound principles where the problem domain is bisected iteratively and since the research on bisection strategies has made significant progress during the last decade.

For the entire collection see [\[Zbl 0805.00009\]](#).

#### MSC:

[90C30](#) Nonlinear programming

[90-02](#) Research exposition (monographs, survey articles) pertaining to operations research and mathematical programming

Cited in **10** Documents

#### Keywords:

[interval Newton method](#); [interval Gauss-Seidel method](#); [accelerating devices](#); [interval arithmetic](#); [global optimization](#); [bisections](#)