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An adaptive trust region method and its convergence. (English) Zbl 1105.90361

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Summary: A new trust region subproblem is proposed. The trust radius in the new subproblem adjusts itself adaptively. As a result, an adaptive trust region method is constructed based on the new trust region subproblem. The local and global convergence results of the adaptive trust region method are proved. Numerical results indicate that the new method is very efficient.

MSC:

90C55 Methods of successive quadratic programming type

90C30 Nonlinear programming

Cited in **42** Documents

Keywords:

unconstrained optimization; global convergence; superlinear convergence