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A nonmonotone conjugate gradient algorithm for unconstrained optimization. (English)

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Summary: Conjugate gradient methods are very important methods for unconstrained optimization, especially for large scale problems. In this paper, we propose a new conjugate gradient method, in which the technique of nonmonotone line search is used. Under mild assumptions, we prove the global convergence of the method. Some numerical results are also presented.

MSC:

90C30 Nonlinear programming
65K10 Numerical optimization and variational techniques

Keywords:

unconstrained optimization; conjugate gradient methods; nonmonotone line search; global convergence