

## 建立在修正BFGS公式基础上的新的共轭梯度法

王开荣, 刘奔

重庆大学数学与统计学院, 重庆 401331

## NEW CONJUGATE GRADIENT METHOD BASED ON THE MODIFIED BFGS FORMULA

Wang Kairong, Liu Ben

College of Mathematics and Statistics, Chongqing University, Chongqing 401331, China

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**摘要** 共轭梯度法是一类非常重要的用于解决大规模无约束优化问题的方法. 本文通过修正的BFGS公式提出了一个新的共轭梯度方法. 该方法具有不依赖于线搜索的充分下降性. 对于一般的非线性函数, 证明了该方法的全局收敛性. 数值结果表明该方法是有效的.

**关键词:** 共轭梯度法 充分下降性 全局收敛性 修正的BFGS公式

**Abstract:** Conjugate gradient methods are a class of important methods for large scale unconstrained optimization. In this paper, motivated by the modified BFGS formula, we proposed a new conjugate gradient method with the sufficient descent direction independent of the line search and obtained the global convergence of the method for the general functions. The numerical results show that the proposed method is efficient.

**Key words:** Conjugate gradient method Sufficient descent property Global convergence Modified BFGS formula

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