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论文

A NEW CONJUGATE GRADIENT METHOD AND ITS GLOBAL CONVERGENCE PROPERTIES

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摘要 This paper presents a new conjugate gradient method for unconstrained optimization. This method reduces to the Polak-Ribiere-Polyak method when line searches are exact. But their performances are differellt in the case of inexact line search. By a simpleexample, we show that the Wolfe conditions do not ensure that the present method and the Polak-Ribiere- Polyak method will pro duce descent direct i0ns even u nder the assumption that the objective function is Strictly convex. This result contradicts the Folk axiom that the Polak-Ribiere-Polyak with the Wolfe line search should find the minimizer of a strictly convex objective function. Finally, we show that there are two ways to improve the new method such that it is globally convergent.

关键词 Conjugate gradient method, global conver

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Key words Conjugate gradient method global convergence unconstrained optimization line searches

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