

求解极小极大问题的非单调过滤算法

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A Nonmonotone Filter Method For Minimax Problems

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- 摘要
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摘要 提出一种改进的求解极小极大问题的信赖域滤子方法,利用SQP子问题来求一个试探步,尾服用滤子来衡量是否接受试探步,避免了罚函数的使用;并且借用已有文献的思想,使用了Lagrange函数作为效益函数和非单调技术,在适当的条件下,分析了算法的全局和局部收敛性,并进行了数值实验.

关键词: [极小极大问题](#) [非单调](#) [全局收敛性](#) [滤子算法](#) [超线性收敛](#)

Abstract: In this paper, we present a modified trust-region filter algorithm to solve the unconstrained minimax problem. The algorithm solves an SQP subproblem to acquire the attempted step. The filter technique is used to weigh the effect of the attempted step so as to avoid the use of a penalty function. Based on the idea of the latest reference, we use the Lagrange function as a merit function, also combine it with the nonmonotone technique to improve the effect of the algorithm. Under some mild conditions, we prove the global convergence and superlinear local convergence. Numerical results show the effectiveness of the algorithm.

Keywords: [minimax problem](#), [nonmonotone](#), [global convergence](#), [Filter methods](#), [superlinear convergence](#)

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