运筹学学报 » 2011, Vol. 15 » Issue (1) :46-58 DOI:

新的滤子方法(英)

濮定国, 邵雯琼, 刘美玲, 刘慈文

A New Filter Method

PU Ding-Guo, SHAO Wen-Qiong, LIU Mei-Ling, LIU Ci-Wen

摘要 本文定义了一种新的滤子方法，并提出了求解光滑不等式约束最优化问题的滤子QP-free非可行域方法. 通过乘子和分片线性非线性互补函数,构造一个等价于原约束问题一阶KKT条件的非光滑方程组.在此基础上，通过牛顿-拟牛顿迭代得到满足KKT最优条件的解,在迭代中采用了滤子线搜索方法,证明了该算法是可实现，并具有全局收敛性. 另外,在较弱条件下可以证明该方法具有超线性收敛性.

关键词：

Abstract: In this paper, we define a new filter and propose a filter QP-free infeasible method with some piecewise linear relational NCP function for constrained nonlinear optimization problems. This iterative method is based on the solution of nonsmooth equations which are obtained by the multipliers and the NCP function for the KKT first-order optimality conditions. Locally, each iteration of this method can be viewed as a perturbation of a mixed Newton-quasi Newton iteration on both the primal and dual variables for the solution of the KKT optimality conditions. We also use the filter on line searches. This method is implementable and globally convergent. We also prove that the method has superlinear convergence rate under some mild conditions.

Keywords:

引用本文:
濮定国, 邵雯琼, 刘美玲等 .新的滤子方法(英)[J] 运筹学学报, 2011,V15(1): 46-58

PU Ding-Guo, SHAO Wen-Qiong, LIU Mei-Ling etc .A New Filter Method[J] OR TRANSACTIONS, 2011,V15(1): 46-58

链接本文:
http://202.120.127.195/shu_ycxxb/CN/ 或 http://202.120.127.195/shu_ycxxb/CN/Y2011/V15/I1/46

没有本文参考文献

没有找到本文相关文献