



解非线性互补问题的非单调可行SQP方法

王华

A Nonmonotone Feasible SQP Method for Nonlinear Complementarity Problem

WANG Hua

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摘要 非线性互补问题可以转化成非线性约束优化问题. 提出一种非单调线搜索的可行SQP方法. 利用QP子问题的K-T点得到一个可行下降方向, 通过引入一个高阶校正步以克服Maratos效应. 同时, 算法采用非单调线搜索技巧获得搜索步长. 证明全局收敛性时不需要严格互补条件, 最后给出数值试验.

关键词: [束优化](#) [序列二次规划](#) [积极集](#) [非单调技巧](#) [收敛性](#)

Abstract: The nonlinear complementarity problem can be reformulated as a nonlinear programming. This paper proposes a feasible SQP method with nonmonotone line search, and obtains a feasible descent direction by full use of the K-T point pair of a QP subproblem without other additional cost. A high-order direction is computed to overcome the Maratos effect. Instead of filter method, a nonmonotone line search is used to obtain the step length. Under some suitable conditions, not including the strict complementary condition, the global convergence of the algorithm is obtained. Some numerical results are also reported in this paper.

Keywords: [constrained](#), [optimization](#), [sequential quadratic](#), [programming](#), [active set](#), [nonmonotone technique](#), [global convergence](#)

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