



一般约束优化基于识别函数的模松弛算法

简金宝, 韦小鹏, 曾汉君, 潘华琴

A Norm-Relaxed Algorithm with Identification Function for General Constrained Optimization

JIAN Jin-Bao, WEI Xiao-Peng, ZENG Han-Jun, PAN Hua-Qin

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摘要 借助于半罚函数和产生工作集的识别函数以及模松弛SQP算法思想, 本文建立了求解带等式及不等式约束优化的一个新算法. 每次迭代中, 算法的搜索方向由一个简化的二次规划子问题及一个简化的线性方程组产生. 算法在不包含严格互补性的温和条件下具有全局收敛性和超线性收敛性. 最后给出了算法初步的数值试验报告.

关键词: [一般约束](#) [最优化](#) [模松弛算法](#) [识别函数](#) [全局收敛性](#) [超线性收敛性](#)

Abstract: In this paper, based on a semi-penalty function and an identification function used to yield a "working set", as well as the norm-relaxed SQP idea, a new algorithm for solving a kind of optimization problems with nonlinear equality and inequality constraints is proposed. At each iteration, to yield the search directions the algorithm solves only one reduced quadratic program (QP) subproblem and a reduced system of linear equations. The proposed algorithm possesses global convergence and superlinear convergence under some mild assumptions without the strictly complementarity. Finally, some elementary numerical experiments are reported.

Keywords: [integral tree](#), [characteristic polynomial](#), [diophantine equation](#), [graph spectrum](#)

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