



一类新的罚函数与罚算法(英)

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A New Class of Penalty Functions and Penalty Algorithm

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摘要 在本文中, 我们提出了带不等式约束的非线性规划问题的一类新的罚函数, 它的一个子类可以光滑逼近\$|I_1|\$罚函数. 基于此类新的罚函数我们给出了一种罚算法, 这个算法的特点是每次迭代求出罚函数的全局精确解或非精确解. 在很弱的条件下算法总是可行的. 我们在不需要任何约束规范的情况下, 证明了算法的全局收敛性. 最后给出了数值实验.

关键词:

Abstract: In this paper, we propose a new class of penalty functions for solving nonlinear programming problems with inequality constraints, a subclass of which smoothly approximates the \$|I_1|\$ penalty function. Based on the new class of penalty functions, we consider a penalty algorithm, the characteristic of which is at each iteration, an exact global optimal solution or an inexact global optimal solution is obtained. Under very weak conditions, the algorithm is always applicable. We present the global convergence without any constraint qualification. Finally, numerical experiments are given.

Keywords:

引用本文:

张玉环, 王长钰 .一类新的罚函数与罚算法(英)[J] 运筹学学报, 2011,V15(1): 25-34

ZHANG Yu-Huan, WANG Chang-Yu .A New Class of Penalty Functions and Penalty Algorithm[J] OR TRANSACTIONS, 2011,V15(1): 25-34
链接本文:

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