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一种新的逼近精确罚函数的罚函数及性质

A new penalty function based on non-coercive penalty functions

摘要 针对可微非线性规划问题提出了一个新的逼近精确罚函数的罚函数形式，给出了近似逼近算法与渐进算法，并证明了近似算法所得序列若有聚点，则必为原问题最优解. 在较弱的假设条件下，证明了算法所得的极小点列有界，且其聚点均为原问题的最优解，并得到在Mangasarian-Fromovitz约束条件下，经过有限次迭代所得的极小点为可行点.

关键词： 精确罚函数 可行点 最优解 非线性规划

Abstract： For the differentiable nonlinear programming problem, this paper proposes a new penalty function form of the approached exact penalty function, presents with the gradual approximation algorithm and evolutionary algorithm, and proves that if the sequences of the approximation algorithm exist accumulation point, it certainly is the optimal solution of original problem. In the weak assumptions, we prove that the minimum sequences from the algorithm is bounded, and its accumulation points are the optimal solution of the original problem and get that in the Mangasarian-Fromovitz qualification condition, through limited iterations the minimum point is the feasible point.

Keywords： exact penalty function, the feasible point, optimal solution, nonlinear programming

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