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弱拟法锥条件下非凸优化问题的同伦算法

刘庆怀[1], 张春阳[2], 张树功[2]

1. 长春工业大学应用数学所, 长春 130012;
2. 吉林大学数学研究所, 长春 130012

Homotopy Method for Solving Nonconvex Optimization with Weak Quasi Normal Condition

LIU Qinghuai[1], ZHANG Chunyang[2], ZHANG Shugong[2]

1. Institute of Applied Mathematics, Changchun University of Technology, Changchun 130012;
2. Institute of mathematics, Jilin University, Changchun 130012

- 摘要
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摘要 本文给出弱拟法锥条件的定义, 并针对非线性组合同伦方程, 得到在弱拟法锥条件下求解约束非凸优化问题的同伦内点算法. 证明了该算法对于可行域的某个子集中几乎所有的点, 同伦路径存在, 并且同伦路径收敛于问题的K-K-T点. 通过数值例子验证了该算法是有效的.

关键词： 非凸优化 同伦算法 内点法 弱拟法锥条件

Abstract： In this paper, we define the weak qusi-normal cone condition and consider the nonlinear homotopy equation under the weak quasi-normal cone condition to solve con- strained non-convex programming program. For almost all the point in some feasible sub- set, the existence of the homotopy path is proved and the homotopy path converges to the K-K-T point. Numerical examples are presented to show the effectiveness of the algorithm.

Key words： nonconvex optimization homotopy method interior point method weak qusi-normal cone condition

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