

基于二次函数光滑化逼近的修正低阶罚函数

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Modified lower order penalty functions based on quadratic smoothing approximation

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摘要 针对不等式约束优化问题, 给出了通过二次函数对低阶精确罚函数进行光滑化逼近的两种函数形式, 得到修正的光滑罚函数. 证明了在一定条件下, 当罚参数充分大, 修正的光滑罚问题的全局最优解是原优化问题的全局最优解. 给出的两个数值例子说明了所提出的光滑化方法的有效性.

关键词: 修正罚函数 光滑化逼近 低阶罚函数 不等式约束优化问题

Abstract: In this paper, two function forms of quadratic smoothing approximation to the lower order exact penalty function are proposed to generate modified smooth penalty functions for inequality-constrained optimization problems. It is shown that under certain conditions, any global minimizer of the modified smooth penalty problem is a global minimizer to the original constrained optimization problem when the penalty parameter is sufficiently large. Two numerical examples are given to show the effectiveness of the present smoothing scheme.

Keywords: [modified penalty function](#), [smoothing approximation](#), [lower order penalty function](#), [inequality-constrained optimization problem](#)

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