

论文

求解Minimax优化问题的Newton型算法

薛毅

北京工业大学应用数理学院 北京 100022

摘要:

Newton法是求解无约束优化问题的最有效的算法,但由于需要计算目标函数的Hesse矩阵计算量大,因此人们大多采用拟Newton(变度量法)求解无约束问题。近些年来,由于自动微分(Automatic Differentiation)技术的提出和计算机速度与内存的不断提高,

关键词:

A NEWTON LIKE ALGORITHM FOR SOLVING MINIMAX OPTIMIZATION PROBLEM

Xue Yi College of Applied Science Beijing University of Technology Beijing 100022

Abstract:

In this paper, a Newton like method for solving minimax optimization problems was proposed. The method belong to sequential quadratic programming method, the Hessian of quadratic programming subproblem is a convex combination of Hessian of objective functions. When Hessian of quadratic programming subproblem is not positive definite, the strategy to force matrix positive definite is used, so that there are good numerical solution for quadratic programming subproblem. The paper prove that the algorithm has global convergence and q-superlinear convergence properties. In order to show the new algorithm having good results, our preliminary numerical experiments are also reported.

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