

论文

A SUPERLINEARLY CONVERGENT GENERALIZED GRADIENT PROJECTION ALGORITHM FOR LINEARLY CONSTRAINED PROBLEMS

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摘要 In this paper, the problem of minimizing a convex function subject to linear constraints is considered. An algorithm which is a combination of DFP variable metric method with generalized gradient projection method is proposed. Under some suitable conditions, its global convergence and local superlinear convergence are proved. The main advantages of new algorithm are that none of any pivoting operation has to be done and one can use a simple recursive formula to compute the projection matrix in each iteration. Computational experiments show that the new algorithm is very effective and stable.

关键词 [Generalized gradient projection method](#)

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Abstract In this paper, the problem of minimizing a convex function subject to linear constraints is considered. An algorithm which is a combination of DFP variable metric method with generalized gradient projection method is proposed. Under some suitable conditions, its global convergence and local superlinear convergence are proved. The main advantages of new algorithm are that none of any pivoting operation has to be done and one can use a simple recursive formula to compute the projection matrix in each iteration. Computational experiments show that the new algorithm is very effective and stable.

Key words [Generalized gradient projection method](#) [linearly constrained problem](#) [superlinear convergence](#) [pivoting](#)

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