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A NEW SQP-FILTER METHOD FOR SOLVING NONLINEAR PROGRAMMING PROBLEMS

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摘要
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A NEW SQP-FILTER METHOD FOR SOLVING NONLINEAR PROGRAMMING PROBLEMS

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Abstract In $\cite{Fletcher2002}$, Fletcher and Leyffer present a new method that solves nonlinear programming problems without a penalty function by SQP-Filter algorithm. It has attracted much attention due to its good numerical results. In this paper we propose a new SQP-Filter method which can overcome Maratos effect more effectively. We give stricter acceptant criteria when the iterative points are far from the optimal points and looser ones vice-versa. About this new method, the proof of global convergence is also presented under standard assumptions. Numerical results show that our method is efficient.

Key words Nonlinear programming Sequential quadratic programming Filter Restoration phase Maratos affects Global convergence Multi-objective optimization Quadratic programming subproblem.

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