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Global Convergence of a Modified SQP Method for Mathematical Programs With Inequalities and Equalities Constraints

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Abstract: When we solve an ordinary nonlinear programming problem by the most and popular sequential quadratic programming (SQP) method, one of the difficulties that we must overcome is to ensure the consistence of its QP subproblems. In this paper, we develop a new SQP method which can assure that the QP subproblem at every iteration is consistent. One of the main techniques used in our method involves solving a least square problem in addition to solving a modified QP subproblem at each iteration, and we need not add bound constraints to the search direction. we also establish the global convergence of the proposed algorithm.

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