

A Comparison of Newton's Method and Two of its Modifications for the Solution of Nonlinear Optimization Problems

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ABSTRACT This paper presents two iterative modifications of the Newton's method for solving unconstrained optimization problems. Each of the two methods requires an update formula which replaces an inverse matrix and maintains positive definiteness property. The methods are based on the recurrence of matrix factorizations. The paper also show the behaviour and performance of the methods at each iteration. Numerical results are presented to compare the performance of the Newton's methods and the two modifications.