

Newton method with explicit group iteration for solving large scale unconstrained optimization problems

ABSTRACT

Numerous numerical methods have been used to solve unconstrained optimization problems. The Explicit Group iteration is one of the numerical methods that has an advantage of the efficient block iteration scheme for solving any linear system. In this paper we applied a combination of the Newton method with two-point Explicit Group (2-point EG) iterative scheme for solving large scale unconstrained optimization problems. In order to evaluate the performance of this method, combination between Newton method with classical Iterative methods namely Jacobi and Gauss-Seidel iterations were used as reference method. The numerical results show that our proposed method is more efficient than the reference method in terms of execution time, number of iteration and absolute error.