

Abstract

In this article, we present a new inertial-type iterative scheme for calculating a common solution of the variational inequality problem for operator that is Lipschitz continuous and monotone and the set of fixed points of a demi-contractive map in a real Hilbert space. The proposed algorithm is depended on the subgradient extragradient method and viscosity-type method which does not require any previous knowledge of Lipschitz constant of the operator. The weak convergence of the algorithm is explored under suitable assumptions on parameters. Here we prove the sequence created by these new methods by two strong convergence theorems. We also provide some numerical experiments to explain the validity and improvement of the proposed algorithm.