Two modified approximation methods for solving quasi-monotone variational inequalities

Behzad Djafari Rouhani[1] and Vahid Mohebbi[2*]

[1,2] Department of Mathematical Sciences, University of Texas at El Paso, 500 W. University Avenue, El Paso, Texas 79968, USA.

Abstract. We introduce two approximation methods for solving quasi-monotone variational inequalities in Hilbert spaces. We assume that the given operator is quasi-monotone and Lipschitz continuous, then we show that the the generated sequence is strongly convergent to a solution of the variational inequality problem, first without any knowledge of the Lipschitz constant of the operator, and then with its knowledge. Finally, we give some examples of applications and numerical experiments of our main results, and compare the speed of convergence of the two methods.

[1]E-mail: [1]behzad@utep.edu, [2]vmohebbi@utep.edu.

*Speaker: Vahid Mohebbi