



Existence and convergence theorems for the split quasi variational inequality problems on proximally smooth sets

Jittiporn Tangkhawiwetkul^{a,*}, Narin Petrot^b

^aDepartment of Mathematics, Faculty of Science and Technology, Pibulsongkram Rajabhat University, Phitsanulok, 65000, Thailand.

^bDepartment of Mathematics, Faculty of Science, Naresuan University, Phitsanulok, 65000, Thailand.

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Abstract

In this paper, we consider the split quasi variational inequality problems over a class of nonconvex sets, as uniformly prox-regular sets. The sufficient conditions for the existence of solutions of such a problem are provided. Furthermore, an iterative algorithm for finding a solution is constructed and its convergence analysis are considered. The results in this paper improve and extend the variational inequality problems which have been appeared in literature. ©2016 All rights reserved.

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1. Introduction

A well known problem, which was studied and interesting for many researchers, is the variational inequality problem. The variational inequality problem is a problem of finding $x^* \in K$ such that

$$\langle T(x^*), x - x^* \rangle \geq 0, \quad \text{for all } x \in K, \quad (1.1)$$

where T is a nonlinear operator on H , K is a nonempty closed and convex subset of a Hilbert space H . This problem was introduced by Stampacchi[31] in 1960s, and it is a power tool which has been used in branches

*Corresponding author

Email addresses: j_suwannawit@hotmail.com (Jittiporn Tangkhawiwetkul), narinp@nu.ac.th (Narin Petrot)