Dynamics of Continuous, Discrete and Impulsive Systems
Series **A:** *Mathematical Analysis* **16 (2009)** 81-91
 http://www.watam.org

A NEW SYSTEM OF GENERALIZED NONLINEAR SET-VALUED VARIATIONAL INCLUSIONS IN BANACH SPACES

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Abstract. In this paper, we study a new system of generalized nonlinear set-valued variational inclusions in Banach spaces. By using the resolvent operator technique for (A,η)-accretive mapping and Nadler's result, we construct some new iterative algorithms for solving this system of generalized nonlinear set-valued variational inclusions and discuss the convergence of iterative sequences generated by the algorithm in Banach spaces. The results presented in this paper improve and extend the previously known results in this area.

Keywords. System of generalized nonlinear set-valued variational inclusions, (A,η)-accretive mapping, resolvent operator technique, Mann iterative algorithm, convergence.
2000 Mathematics subject classification: 49J40; 47H10

1 Introduction

The resolvent operator technique is interesting and important to study the existence of solution and to develop iterative algorithms for different kinds of variational inequalities and variational inclusions, see [1] -[31], and references therein. Recently, Huang and Fang [32] were the first to introduce the generalized m-accretive mapping and give the definition of the resolvent operator for the generalized m-accretive mappings in Banach spaces. They also showed some properties of the resolvent operator for the generalized m-accretive mappings in Banach spaces. For further works, see Huang [12] and the references therein. Very recently, inspired and motivated by the works of [5], [7]-[9], [12], [15], [17], [28]. Lan et al. [22] introduced a new concept of (A,η)-accretive mappings, which generalizes the existing monotone or accretive operators, and studied some properties of (A,η)-accretive mappings and defined resolvent operators associated with (A,η)-accretive mappings. They also studied a class of variational inclusions using the resolvent operator associated with (A,η)-accretive mappings.

On the other hand, in [26], Verma introduced a new systems of nonlinear strongly monotone variational inequalities and studied the approximate of