

Approximation of common zeros of accretive operators and fixed points of multivalued nonexpansive mappings

Vahid Mohebbi^{1*} and Behzad Djafari Rouhani²

^{1,2} Department of Mathematical Sciences, University of Texas at El Paso, 500 W. University Avenue, El Paso, Texas 79968, USA.

Abstract. We study the strong convergence of the sequence generated by an inexact proximal point method for finding common solutions of zeros of m -accretive operators and fixed points of multivalued nonexpansive mappings in Banach spaces. We prove that the generated sequence is strongly convergent to a point which is the sunny nonexpansive retraction of a given point onto the intersection of the zero set of the accretive operator and the fixed point set of the multivalued nonexpansive mapping. We provide also a sufficient condition for the common solution set of the problem to be nonempty. Finally, we present some applications and numerical experiments of our results to quasi-equilibrium problems.

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

*Speaker: Vahid Mohebbi