A STRONG CONVERGENCE THEOREM FOR AN INERTIAL ALGORITHM FOR A COUNTABLE FAMILY OF GENERALIZED NONEXPANSIVE MAPS

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Abstract. Let E be a uniformly smooth and strictly convex real Banach space with dual space, E^*. In this paper, we present a Krasnoselkii-type inertial algorithm and prove a strong convergence theorem for approximating a common fixed point for a countable family of generalized nonexpansive maps. Furthermore, we apply our theorem and prove a strong convergence theorem for approximating a common fixed point for a countable family of generalized-J-nonexpansive maps. Our theorem is an improvement of the results of Klin-earn *et al.* (Taiwanese J. of Maths. Vol. 16, No. 6, pp. 1971-1989, Dec. 2012), Chidume *et al.* (Advances in Fixed Point Theory, Vol. 7, No. 3 (2017), 413-431) and Dong *et al.* (Optimization Letters, 2017, DOI: 10.1007/s11590-016-1102-9). Finally, we give a numerical experiment to illustrate the efficiency and advantage of the inertial algorithm over an algorithm without inertial term.

Key Words and Phrases: Generalized nonexpansive maps, *NST*-condition, inertial term, fixed point.

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