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STRONG CONVERGENCE FOR THE MANN ITERATION OF λ-STRICT PSEUDO-CONTRACTION

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Abstract. In this paper, we prove strong convergence of the Mann iteration of an λ-strict pseudo-contraction T in a real $q-$uniformly smooth Banach space. The results presented in this paper are interesting extensions and improvements upon those known ones of Marino and Xu [J. Math. Anal. Appl. 324(2007) 336-349], and are development and complementariness of the corresponding ones of Chai and Song [Fixed Point Theory and Applications, 2011(2011) 95], Cai and Hu [Computers & Mathematics with Applications 59(1)(2010), 149-160], Zhou [Nonlinear Anal. 69(2008) 3160-3173, Acta Mathematica Sinica, English Series, 26(2010), 743-758] and Zhang and Su [Convergence theorems for strict pseudo-contractions in q-uniformly smooth Banach spaces, Nonlinear Analysis, 70(9)(2009), 3236-3242; 71(2009) 4572-4580].
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