

# Asymptotic Behavior of Bregman Nonexpansive Sequences in Banach Spaces

Behzad Djafari Rouhani

Department of Mathematical Sciences, University of Texas at El Paso, 500 W.  
University Ave., El Paso, Texas, 79968, USA

E-mail address: [behzad@utep.edu](mailto:behzad@utep.edu)

## Abstract

We introduce the notion of Bregman nonexpansive sequences and mappings in a Banach space  $E$ , and study the asymptotic behavior of such sequences and mappings in  $E$ . These results extend our previous results for  $\Phi$ -nonexpansive sequences and give a partial answer to the still open problem raised in 1981 by Djafari Rouhani for nonexpansive sequences in a Banach space.

**Keywords.** Asymptotic behavior; asymptotically regular sequence; strong convergence; weak convergence; Bregman nonexpansive sequence.

**AMS Classification Number:** 47H10, 47H05, 47J25.