

# Hajek-Smith Operators

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## Abstract

If  $X$  is an infinite-dimensional Banach space and  $R$  is a linear and bounded operator on  $X$ , we are interested in the study of its orbits which tend to infinity, that is the set

$$A_R = \{x \in X, \|R^n x\| \rightarrow \infty\}.$$

In a recent article, Hajek and Smith constructed an operator  $R$  such that  $A_R$  is non-empty and not dense in  $X$ , provided  $X$  has a symmetric basis (answering a conjecture of Prajitura). We show that if  $X$  is only separable, the same conclusion remains true.