

## Blum-Hanson property and quasisimilarity of operators

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Let  $T$  be a contraction on a Hilbert space  $H$  such that  $T^n$  converges in the weak operator theory. By a result motivated by ergodic theory then  $T$  has the Blum-Hanson property, i.e.,  $\lim_{N \rightarrow \infty} N^{-1} \sum_{n=1}^N T^{k_n} x$  exists in the norm topology for each  $x \in H$  and each increasing subsequence  $(k_n)$ . We show that this is not true for power bounded Hilbert space operators. This also implies that there are power bounded operators which are not quasisimilar to a contraction.

This answers an open problem from ergodic theory as well as questions concerning (quasi)similarity of operators.