Evangelie Zachos* (ezachos@princeton.edu), Tudor Padurariu (tudor_pad@yahoo.com) and Cesar Silva (cesar.e.silva@williams.edu). \textit{Positive Type Infinite Measure Ergodic Transformations.}

In 1964, Hajian and Kakutani defined an infinite measure-preserving transformation $T$ to be of zero type if $\lim n \to \infty \mu(T^{-n}(A) \cap A) = 0$ for all $A$ of finite measure, and they also observed that when $T$ is conservative ergodic, if it is not of zero type then $\lim \sup n \to \infty \mu(T^{-n}(A) \cap A) > 0$ for all $A$ of finite positive measure. For a vector $v = (v_1, v_2, \ldots, v_d)$ of positive entries we define $T$ if $v$-positive type if $\lim \sup n \to \infty \mu(A \cap T^{v_1n}(A)) \ldots \mu(A \cap T^{v_dn}(A)) > 0$.

We study this property and construct examples of rank-one and Markov shift transformations satisfying it. (Received September 25, 2012)