N-tuple orbits and n-tuple weak orbits tending to infinity

Sonja Mančevska*, Marija Orovčanec[†]

*University "Ss. Kliment Ohridski" – Bitola, Faculty of Information and Communication Technologies *Ss. Cyril and Methodius University, Faculty of Natural Sciences and Mathematics, Skopje

In this paper we give a sufficient condition for a given n pairwise commuting bounded linear operators on an infinite dimensional Banach space X, which will imply that the space contains a dense set of vectors each with a corresponding n-tuple orbit tending to infinity. The same condition is sufficient to imply that the product of X and its dual space will contain a dense set of pairs each with a corresponding n-tuple weak orbit tending to infinity.