ATTRACTIVITY AND POSITIVITY RESULTS FOR NONLINEAR FUNCTIONAL INTEGRAL EQUATIONS VIA MEASURE OF NONCOMPACTNESS

Bapurao C. Dhage

Abstract. Using the techniques of some new measures of noncompactness we prove in this paper some existence theorems concerning the global attractivity and ultimate positivity of the solutions for a nonlinear functional integral equation. Our investigations are placed in the Banach space of real-valued functions defined, continuous and bounded on unbounded intervals together with the applications of a recent measure theoretic fixed point theorem of Dhage [7]. On one hand, our results generalize the attractivity results of Dhage [9] with a different method and the results of Banas and Rzepka [4] and Banas and Dhage [5] with similar method but under weaker conditions and on the other hand they are new to the literature as regards ultimate positivity of the solutions for nonlinear functional integral equations. A few realizations of the obtained results are also indicated.


Keywords and phrases: functional integral equation, measure of noncompactness, fixed point theorem, attractive solutions, ultimately positive solutions.

REFERENCES