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G-ATTRACTOR AND G-EXPANSIVITY OF THE G-UNIFORM LIMIT OF A SEQUENCE OF DYNAMICAL SYSTEMS

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Abstract: In this paper, we discuss the notions of G-attractor and G-expansive. It is found that if $< (X, f_n) >$ is a sequence of dynamical systems converging G-uniformly to f and if the sequence $< (X, f_n) >$ has a G-uniform attractor $Y \subset X$, then Y is also a G-attractor of f. We also show that if $< (X, f_n) >$ is a sequence of G-expansive dynamical systems with same expansivity time and expansivity constant and converging G-uniformly to f, then (X, f) is also G-expansive. We investigate the G-mixing, G-sensitive and G-shadowing property of the orbital limit f.

Keywords and Phrases: G-Attractor, G-Expansive, G-Sensitive, G-Mixing, G-Shadowing property, G-Nonwandering.

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1. Introduction

In modern mathematical sciences, study of dynamical systems has been an interesting field drawing attention to many mathematicians due to its interesting applications in various fields such as Physics, Biology and Economics. Let $f_n : X \to X$ be a sequence of continuous self maps on a compact metric space X. Many researchers have studied the inheritance of various dynamical notions from the sequence to the uniform limit as well as the orbital limit ([1, 5, 7, 10, 11, 13, 14, 16, 17, 22, 24]). Recently, many researchers have extended the idea to