

STRONGER FORMS OF SENSITIVITY ON PRODUCT DYNAMICAL SYSTEM VIA FURSTENBERG FAMILIES

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Abstract

In this paper, it has been investigated that how various stronger notions of sensitivity like $\mathcal{F}$ -sensitive, multi- $\mathcal{F}$ -sensitive, $(\mathcal{F}_1, \mathcal{F}_2)$ -sensitive, etc., where $\mathcal{F}$, $\mathcal{F}_1$, $\mathcal{F}_2$ are Furstenberg families, are carried over to countably infinite product of dynamical systems having these properties and vice versa. Similar results are also proved for induced hyperspaces.

1. Introduction

Dynamical system is one of the widely applicable branches of mathematics devoted to the study of systems governed by a consistent set of laws over time such as difference and differential equations. It can model an incredible range of behaviour of our daily life such as the motion of planets in solar system, the shape and growth of plants, the interaction of optical pulses, the way diseases spread in population and so on. As such a dynamical system is defined to be a pair (X, f) , where X is a compact metric space and $f: X \rightarrow X$ is a continuous map. After the introduction of mathematical concept of *chaos* in 1975 by Li and Yorke [9], the theory of chaos has

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