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by

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UNIFORM DYNAMICS

CHRIS GOOD AND SERGIO MACÍAS

Abstract. We study uniform dynamics properties for compact Hausdorff spaces. Mainly, the uniform shadowing and the uniform h-shadowing properties of induced maps between hyperspaces. It is known that if f is a map between compact metric spaces with the shadowing property, then it is not necessarily true that, for $n \geq 3$, the induced map of f, $\mathcal{F}_n(f)$, between the n-fold symmetric products, has the shadowing property. We modify the definition of the uniform shadowing property of an induced map between symmetric products to obtain the following: a map g between compact Hausdorff spaces has the uniform shadowing property if and only if given a positive integer n, the induced map of g, $\mathcal{F}_n(g)$, has the modified uniform shadowing property. We do a similar modification of the uniform h-shadowing property for an induced map between symmetric products to have that: a map g between compact Hausdorff spaces has the uniform h-shadowing property if and only if given a positive integer n, the induced map of g, $\mathcal{F}_n(g)$, has the modified uniform h-shadowing property. We also show that several uniform dynamical properties are preserved under semi-conjugacies.

1. Introduction

Most of the time, a discrete dynamical system consists of a compact metric space X and a continuous function f from X into X. Many properties of interest in those systems are defined in topological terms only. Others are defined in terms of the metric or the existence of an equivalent metric on the space. One such concept is the definition of shadowing, which is generalised to uniform Hausdorff topological spaces in [9].

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