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by

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PRECOMPACTNESS OF ISOMETRIC CONJUGACY CLASSES OF CONTINUOUS MAPS

MEIHUA DONG AND CARLOS MORALES

Abstract. Let $\mathcal{C}$ be the set of isometric conjugacy classes of continuous maps of compact metric spaces equipped with the quasi-metric defined by Alexander Arbieto and Carlos Arnoldo Morales Rojas, [*Topological stability from Gromov–Hausdorff viewpoint*, Discrete Contin. Dyn. Syst. 37 (2017), no. 7, 3531–3544]. We prove that a subset of $\mathcal{C}$ is precompact if and only if it is equicontinuous.

1. Introduction

The *Gromov–Hausdorff space* is the set of compact metric spaces up to isometries endowed with the Gromov–Hausdorff metric [2]. This space has been studied in the literature. For instance, it is known that it is Polish, strictly intrinsic, and not boundedly compact ([7], [8]). Also, a generic element of this space is totally discontinuous, totally anisometric, homeomorphic to the Cantor set, has no collinear triples of different points, and cannot be embedded in any Hilbert space [12].

Now consider the set of continuous maps of compact metric spaces up to isometric conjugacy. Equip this space with the quasi-metric defined in [1] (for the notion of quasi-metric, see [5, p. 404]). It is natural to ask if the aforementioned properties of the Gromov–Hausdorff space hold for this space too. For instance, Richard Javier Cubas [3] proves that a transitive element in this space can be approximated by periodic orbits. After noticing that the approximation by periodic orbits does not imply

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