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Answers to questions on multivalued fractals in b-metric spaces

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Abstract

In this paper we give answers to questions on multivalued fractals on b-metric spaces proposed in [4].

Keywords:

b-metric, multivalued fractal, iterated map system 2010 MSC: 28A80, 54H25

1. Introduction

Fractals and multivalued fractals play an important role in several topics of mathematics and applied sciences [3], [5]. The most common setting for the study of fractals and multivalued fractals is the case of maps on complete or compact metric spaces. In 2004 Fišer [10] presented the Collage Theorems for iterated multifunction systems and for respective continuation principles. In 2008 Chifu and Petruşel [5] reported old and new results in the theory of multivalued fractals. In 2009 Llorens-Fuster *et al.* [16] proved some existence and uniqueness results for the self-similar sets of a mixed iterated function systems and studied the well-posedness of the self-similarity problem for some classes of iterated multifunction systems. Recently, Ri [22] obtained a fixed point theorem for some generalized contractions in the fractal space and Dung [8] solved open questions on multivalued fractal map generated by a system of Ćirić type multivalued maps proposed in [20].

In 1979 Macías and Segovia [17] used the notion of a quasi-metric space to state results dealing with the geometric structure of spaces of homogeneous

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