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Comment on: A new fixed point theorem in the fractal space

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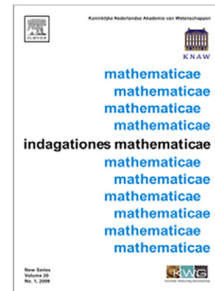
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11 **COMMENT ON: A NEW FIXED POINT THEOREM IN THE**
12 **FRACTAL SPACE**

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22 **ABSTRACT.** In this paper, we give a counterexample to Lemma 2.2 proved by
23 Song-il Ri [A new fixed point theorem in the fractal space, *Indagationes Math-*
24 *ematicae* 27 (2016) 85-93]. Further, we improve the result of Song-il Ri by em-
25 ploying a proper setting.
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29 **1. Introduction**
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31 In order to avoid repetition we adopt the same terminology and the notations as
32 have been utilized in [5].
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35 The following theorem is essentially proved in [5].
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38 **Theorem 1.1.** *Let (X, d) be a complete metric space and f be contractive map in*
39 *the following sense: there is a function $\varphi : [0, \infty) \rightarrow [0, \infty)$ such that $\varphi(t) < t$ and*
40 *$\limsup_{s \rightarrow t^+} \varphi(s) < t$ for all $t > 0$ and*

41
$$d(fx, fy) \leq \varphi(d(x, y)), \text{ for any } x, y \text{ in } X.$$

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43 *Then f has a unique fixed point.*
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46 To prove Theorem 1.1 (above), the author utilized the following lemma (Lemma
47 2.1 [5]):
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50 MSC(2010): Primary: 47H09; Secondary: 47H10.

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52 Keywords: Fixed point, ϕ -contraction, Hausdroff distance, Fractal.
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