Vasuki, R.; **Veeramani, P.**

Fixed point theorems and Cauchy sequences in fuzzy metric spaces. (English) Zbl 1029.54012

Fuzzy Sets Syst. 135, No. 3, 415-417 (2003).

One can find several definitions of the concept of a Cauchy sequence in a fuzzy metric space in the sense of Kramosil and Michalek. This paper presents an example illustrating that definitions given by *M. Grabiec* [ibid. 27, 385-389 (1989; Zbl 0664.54032)] and *R. Vasuki* [ibid. 97, 395-397 (1998; Zbl 0960.54005)] are not equivalent to the definition of George and Veeramani. This fact explains in particular why "fixed point type" theorems proved by different authors (see e.g., papers by M. Grabiec, V. Gregori and A. Sapena and R. Vasuki) sometimes have a different "shape".

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MSC:

54A40 Fuzzy topology
54H25 Fixed-point and coincidence theorems (topological aspects)
54E35 Metric spaces, metrizability

Keywords:

Fuzzy metric space; Cauchy sequence; Fixed point theorems

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References:

[1] George, A.; Veeramani, P., On some results on fuzzy metric spaces, Fuzzy sets and systems, 64, 395-399, (1994) · Zbl 0843.54014

[2] Grabiec, M., Fixed points in fuzzy metric spaces, Fuzzy sets and systems, 27, 385-389, (1989) · Zbl 0664.54032

[3] Gregori, V.; Sapena, A., On fixed point theorems in fuzzy metric spaces, Fuzzy sets and systems, 125, 245-252, (2002) · Zbl 0995.54046

[4] G. Song, Comments on 'A common fixed point theorem in a fuzzy metric space', Fuzzy Sets and Systems, this issue.

[5] Vasuki, R., A common fixed point theorem in a fuzzy metric space, Fuzzy sets and systems, 97, 395-397, (1998) · Zbl 0926.54005