Abstract

In this paper, we established fixed point theorems for two and three self-maps of a complete fuzzy 2-metric space. The contractive definition is a generalization of Hardy-Rogers and the commuting condition of Jungck is replaced by the concept of weakly commuting. The notion of relative asymptotic regularity of a sequence in a fuzzy 2-metric space is introduced and fixed point theorems for two and three self-mappings of a complete fuzzy 2-metric space is proved. Further, a result for a pair of weakly commuting mappings and relative asymptotically regular sequence is presented in complete fuzzy 2-metric space.

References

1. A. Aliouche, B. Fisher, Fixed point theorem for mappings satisfying implicit relation on two complete metric spaces, Applied Mathematics and Mechanics, 2
2. A. George and P. Veeramani, On some results in fuzzy metric spaces, Fuzzy Sets and systems, 3
5. B. Fisher, Fixed point on two metric spaces, Glasnik Mat.
8. G. Jungck, Commuting mappings and fixed points, Amer. Math. Monthly
9. H. W. Engl, Weak convergence of asymptotically regular sequence for non expansive mapping and connections with certain cheishef-centers, Nonlinear Analysis TMA.
15. L. A. Zadeh, Fuzzy sets, Inform and Control
17. M. Telci, Fixed points on two complete and compact metric spaces, Applied Mathematics and Mechanics

Index Terms

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Keywords

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