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On soft fuzzy metric spaces

C. Yıldız[1], F.S. Erduran[2]

[1] *Gazi University, Ankara, Turkey, cyildiz@gazi.edu.tr*
[2] *Gazi University, Ankara, Turkey, ferhansola@gazi.edu.tr*

Abstract

Lots of our traditional tools for formal modelling, reasoning and computing are crisp. Crisp mean dichotomous, that is yes-or-no type rather than more-or-less type. In traditional dual logic, for instance, a statement can be true or false and nothing in between. However, in daily life the problems in many fields such as engineering, physics, computer sciences, economies, social sciences,medical sciences and many other diverse fields deal with uncertain data and that may not be successfully modelled by the classical methods. To solve this kinds of problems, there are theories such as; theory of probability, theory of fuzzy sets, theory of intuitionistic fuzzy sets and theory of interval mathematics. The most appropriate theory, for dealing with uncertainties is the theory of fuzzy sets introduced by Zadeh [7]. But the fuzzy set operations based on the arithmetic operation, for this reason in 1999, Molodtsov [5] showed a new mathematical tool for dealing with uncertainties which is free of the difficulties. This so-called soft set theory.

A soft set is a parameterized family of subsets of the universal set. Research work in soft set theory have been progressing rapidly since Maji et al. [4] introduced several operations on soft sets and applied it to desicion making problems. Then, Das and Samanta [3] initiated soft metric spaces and investigated some basic properties. For other some study see [1, 2, 6].

In this study, we introduce soft fuzzy metric spaces and examine some topological structures such as countability, convergence, separability, completeness etc.

Key Words: Soft set, Soft fuzzy metric.

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