Fixed Point Theory, 21(2020), No. 2, 481-494
DOI: 10.24193/fpt-ro.2020.2.35
http://www.math.ubbcluj.ro/~nodeacj/sfptcj.html

NONEXPANSIVE MAPPINGS AND CONTINUOUS s-POINT SPACES

SHAHROKH GHASEMZADEHDIBAGI*, MEHDI ASADI** AND SOMAYEH HAGHAYEGHI***

*Department of Mathematics, Karaj Branch, Islamic Azad University, Karaj, Iran
E-mail: sh.ghasemzadeh@kiau.ac.ir

**Department of Mathematics, Zanjan Branch, Islamic Azad University, Zanjan, Iran
E-mail: masadi@iauz.ac.ir (Corresponding author)

***Department of Mathematics, Karaj Branch, Islamic Azad University, Karaj, Iran
E-mail: s.haghayeghi@kiau.ac.ir

Abstract. Here, the concept of continuous s-point space is introduced in b-metric spaces. Under suitable assumptions, these spaces are absolute retracts and a generalization of the continuous mid-point spaces. Moreover, an important fixed point theorem is proved for nonexpansive mappings in continuous s-point spaces.
Key Words and Phrases: Continuous s-point spaces, b-metric spaces, nonexpansive mappings.
2010 Mathematics Subject Classification: 47H10, 51D99, 47H10.

References

[1] M. Asadi, B.E. Rhoades, H. Soleimani, *Some notes on the paper "The equivalence of cone metric spaces and metric spaces"*, Fixed Point Theory and Applications 2012, 2012:87.
[2] H.F. Buhnenblust, S. Karlin, *ON the theorem of Ville*, Contributions to the Theory of Games, Princeton, **1**(1950), 155-160.
[3] D. Burago, Y. Burago, S. Yvanov, *A Course in Metric Topology*, Graduate Text in Mathematics, American Mathematical Society, **33**(2001).
[4] S. Czerwik, *Nonlinear set-valued contraction mappings in b-metric spaces*, Atti Sem. Mat. Univ. Modena, **46**(2)(1998), 263-276.
[5] J. Dugundji, *Locally equiconnected spaces and absolute neighborhood retracts*, Fund. Math., **57**(1965), 187-193.
[6] Y. Feng, W. Mao, *Equivalence of cone metric spaces and metric spaces*, Fixed Point Theory, **11**(2010), no. 2, 259-264.
[7] A. Hojat Ansari, P. Kumam, B. Samet, *A fixed point problem with constraint inequalities via an implicit contraction*, J. Fixed Point Theory Appl., **19**(2017), no. 2, 1145-1163.
[8] C. Horvath, *A note on metric spaces with continuous midpoints*, Annals of the Academy of Romanian Scientists, Series on Mathematics and its Applications, **1**(2)(2009), 252-288.
[9] P. Kumam, N. Van Dung, V.T. Le Hang, *Some equivalences between cone b-metric spaces and b-metric spaces*, Abstract Applied Anal., Vol. 2013, Art. ID 573740, 8 pages.
[10] S. Phiangsungnoen, P. Kumam, *On stability of fixed point inclusion for multivalued type contraction mappings in dislocated b-metric spaces with application*, Math. Meth. Appl. Sci. 2018, 114, https://doi.org/10.1002/mma.4871.

Received: December 20, 2017; Accepted: September 30, 2018.