

COMMON FIXED POINT THEOREM FOR NONCOMPATIBLE MAPS IN PROBABILISTIC METRIC SPACE

Suneel Kumar, Sunny Chauhan and B. D. Pant

Abstract. In this paper, we prove a common fixed point theorem for noncompatible maps in probabilistic metric space using implicit relation. Our result does not require either the completeness of the space or continuity of the maps.

[Full text](#)

References

- [1] M. Aamri and D. El Moutawakil, *Some new common fixed point theorems under strict contractive conditions*, J. Math. Anal. Appl., **270**(2002), 181-188. [MR1911759](#). [Zbl 1008.54030](#).
- [2] J.X. Fang and Y. Gao, *Common fixed point theorems under strict contractive conditions in Menger spaces*, Nonlinear Analysis, **70**(1)(2009), 184-193. [MR2468228](#). [Zbl 1170.47061](#).
- [3] G. Jungck, *Compatible mappings and common fixed points*, Int. J. Math. Math. Sci., **9**(1986), 771-779. [MR0870534](#). [Zbl0613.54029](#).
- [4] I. Kubiacyk and S. Sharma, *Some common fixed point theorems in Menger space under strict contractive conditions*, Southeast Asian Bull. Math., **32**(2008), 117-124. [MR2385106](#). [Zbl 05629600](#).
- [5] S. Kumar and B.D. Pant, *A common fixed point theorem in probabilistic metric space using implicit relation*, Filomat, **22**(2)(2008), 43-52. [MR2484193](#). [Zbl pre05619609](#).

2010 Mathematics Subject Classification: 54H25; 47H10.

Keywords: Probabilistic metric space; Noncompatible maps; Weakly compatible maps; Implicit relation; Property (E.A).

<http://www.utgjiu.ro/math/sma>

- [6] K. Menger, *Statistical metrics*, Proc. Nat. Acad. Sci. U.S.A., **28**(1942), 535-537. [MR0007576](#). [Zbl 0063.03886](#).
- [7] D. Mihet, *A generalization of a contraction principle in probabilistic metric spaces*, Part II, Int. J. Math. Math. Sci., **2005**(5)(2005), 729-736. [MR2173690](#). [Zbl 1083.54535](#).
- [8] S.N. Mishra, *Common fixed points of compatible mappings in PM-spaces*, Math. Japon., **36** (1991), 283-289. [MR1095742](#). [Zbl0731.54037](#).
- [9] R.P. Pant, *Common fixed point theorems for contractive maps*, J. Math. Anal. Appl., **226**(1998), 251-258. [MR1646430](#). [Zbl0916.54027](#).
- [10] B.D. Pant and S. Chauhan, *Common fixed point theorems for semi compatible mappings using implicit relation*, Int. J. Math. Anal., **5**(28)(2009), 1389-1398. [MR2604831](#).
- [11] H.K. Pathak, R.R. López and R.K. Verma, *A common fixed point theorem using implicit relation and property (E.A) in metric spaces*, Filomat, **21**(2)(2007), 211-234. [MR2360891](#). [Zbl 1141.54018](#).
- [12] B. Schweizer and A. Sklar, *Statistical metric spaces*, Pacific J. Math., **10**(1960), 313-334. [MR0115153](#). [Zbl 0091.29801](#).
- [13] B. Singh and S. Jain, *A fixed point theorem in Menger Space through weak compatibility*, J. Math. Anal. Appl., **301**(2005), 439-448. [MR2105684](#). [Zbl 1068.54044](#).

Suneel Kumar
 Government Higher Secondary School,
 Sanyasiowala, PO - Jaspur (U.S.Nagar),
 Uttarakhand, India 244712.
 e-mail1: ksuneel_math@rediffmail.com
 e-mail2: suneelchauhan@yahoo.in

Sunny Chauhan
 Department of Mathematics,
 R.H. Government Postgraduate College,
 Kashipur, Uttarakhand, India 244713.
 e-mail: sun.gkv@gmail.com

B. D. Pant
 Government Degree College,
 Champawat, Uttarakhand, India.
 e-mail: badridatt.pant@gmail.com
