

## COMMON FIXED POINT THEOREM FOR HYBRID PAIRS OF R-WEAKLY COMMUTING MAPPINGS

R. K. Saini, Sanjeev Kumar and Peer Mohammed

**Abstract.** In this paper we established a common fixed point theorem for four mappings  $f, g$  (crisp) and  $S, T$  (fuzzy) of  $R$  – weakly commuting mapping in a metric space.

[Full text](#)

### References

- [1] S. C. Arora and V. Sharma, *Fixed point theorems for fuzzy mappings*, Fuzzy Sets and Systems, **110** (2000), 127-130. [MR1748116](#) [Zbl 0988.54047](#).
- [2] R. K. Bose and D. Sahani, *Fuzzy mappings and fixed point theorems*, Fuzzy Sets and Systems, **21** (1987), 53-58. [MR0868355](#) ([87m:54018](#)). [Zbl 0609.54032](#).
- [3] D. Butnariu, *Fixed points for fuzzy mappings*, Fuzzy Sets and Systems, **7** (1982), 191 - 207. [MR0644207](#) [Zbl 0473.90087](#).
- [4] S. S. Chang, *Fixed point theorems for fuzzy mappings*, Fuzzy Sets and Systems, **17** (1985), 181 - 187. [MR0811539](#) [Zbl 0579.54034](#).
- [5] A. Chitra, *A note on the fixed point of fuzzy maps on partially ordered topological spaces*, Fuzzy Sets and Systems, **19** (1986), 305 - 308. [MR0848669](#) [Zbl 0601.54058](#).
- [6] S. Heilpern, *Fuzzy mappings and fixed point theorem*, J. Math. Anal. Appl., **83** (1981), 566-569. [MR0641351](#) ([83a:54070](#)). [Zbl 0486.54006](#).
- [7] T. Kamran, *Common coincidence points of R-weakly commuting map*, IJMMS, **3** (2001), 179-182. [MR1841104](#). [Zbl 1006.54061](#).
- [8] T. Kamran, *Non-commuting f-contraction mappings*, NOVI SAD J. Math., **34** No. 1, 2004, 33-37. [MR2140186](#). [Zbl 1085.54029](#).

---

2010 Mathematics Subject Classification: 54H25; 47H10; 03E72.

Keywords: Fixed Point Theorems; Weakly Commuting Fuzzy Maps; Contractive Conditions of Integral Type.

\*\*\*\*\*

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

- [9] B. S. Lee and S. J. Cho, *A fixed point theorem for contractive type fuzzy mappings*, Fuzzy Sets and Systems, **61** (1994), 309-312. [MR1273252](#). [Zbl 0831.54036](#) .
- [10] S. B. Nadler, *Multi-valued contraction mappings*, Pacific J. Math., **30** (1969), 475-488. [MR0254828](#). [Zbl 0187.45002](#).
- [11] H. K. Pathak, Y. J. Cho, and S. M. Kang, *Common fixed points of biased maps of type (A) and applications*, Internat. J. Math. Math. Sci. **21** (1998), 681-694. [MR1642200](#). [Zbl 0920.47051](#).
- [12] H. K. Pathak, Y. J. Cho, and S. M. Kang, *Remarks on R-weakly commuting mappings and common fixed point theorems*, Bull. Korean Math.Soc. **34**(2) (1997) 247-257. [MR1455445](#). [Zbl 0878.54032](#).
- [13] Padaliya, and R. P. Pant, *Common fixed point theorem for R-weakly commuting mappings of type (Af)*, Soochow Journal of Mathematics, **31** No. 2 (2005), 155-163. [MR2149868](#). [Zbl 1071.54502](#).
- [14] R. A. Rashwan and M. A. Ahmed, *Common fixed point theorems for fuzzy mappings*, Arch. Math. (Brno), **38** (2002), 219-226. [MR1921593](#). [Zbl 1068.54008](#).
- [15] T. Som, R. N. Mukherjee, *Some Fixed point theorems for fuzzy mappings*, Fuzzy Sets and Systems, **33** (1989), 213-219. [MR1024224](#). [Zbl 0685.54030](#).
- [16] M. D. Weiss, *Fixed points, separation and induced fuzzy topologies for fuzzy sets mappings*, J. Math. Anal. Appl. **50** (1975), 142 - 150. [MR0370460](#). [Zbl 0297.54004](#).
- [17] L. A. Zadeh, *Fuzzy sets*, Inform and Control, **8** (1965), 338 - 353. [MR0219427](#). [Zbl 139.24606](#).

R. K. Saini  
Department of Mathematics,  
D.A.V. College,  
Muzzafernager-251001, UP, India.  
e-mail:rksaini03@yahoo.com

Sanjeev Kumar  
Department of Mathematics,  
D.A.V. College,  
Muzzafernager-251001, UP, India.

Peer Mohammad  
Department of Mathematics,  
Eritrea Institute of Techonology, Asmara,  
Eritrea.

\*\*\*\*\*