## MORE GENERAL COMMON FIXED POINT THEOREMS UNDER A NEW CONCEPT

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## Abstract

A general common fixed point theorem for two pairs of weakly subsequentially continuous mappings (recently introduced) satisfying a significant estimated implicit function is proved. An extension of this result is thereby obtained. Our results assert the existence and uniqueness of common fixed points in several cases.

Key words and phrases: Subcompatible mappings, R-weakly commuting mappings of type  $(A_f)$  (resp.  $(A_g)$ ), sequentially continuous mappings of type  $(A_f)$  (resp.  $(A_g)$ ), weakly reciprocally continuous mappings, weakly subsequentially continuous mappings.

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## References

- [1] R.P. Agarwal, R.K. Bisht, N. Shahzad A comparison of various noncommuting conditions in metric fixed point theory and their applications, Fixed Point Theory and Applications (2014), 2014:38.
- [2] M.A. Al-Thagafi, N. Shahzad Generalized I-nonexpansive selfmaps and invariant approximations, Acta Math. Sin. 23 (2007), no. 6, 965-972.
- [3] H. Bouhadjera, C. Godet-Thobie Common fixed point theorems for pairs of subcompatible maps, arXiv: 0906.3159v1 [math. FA] 17 June 2009.
- [4] H. Bouhadjera, C. Godet-Thobie Common fixed point theorems for pairs of subcompatible maps, arXiv: 0906.3159v2 [math. FA] 23 May 2011.

- [5] D. Gopal, M. Imdad, M. Abbas Metrical common fixed point theorems without completness and closedness, Fixed Point Theory and Applications (2012), 2012:18.
- [6] G. Jungck Compatible mappings and common fixed points, Internat. J. Math. Math. Sci. 9 (1986), no. 4, 771-779.
- [7] S. Kumar A note on Jungck's fixed point theorems, Fasc. Math. 45 (2010), 59-69.
- [8] R.P. Pant Common fixed points of four mappings, Bull. Cal. Math. Soc. 90 (1998), 281-286.
- [9] R.P. Pant Common fixed points of noncommuting mappings, J. Math. Anal. Appl. 188 (1994), 436-440.
- [10] R.P. Pant, R.K. Bisht Common fixed point theorems under a new continuity condition, Ann. Univ. Ferrara 58 (2012), 127-141.
- [11] R.P. Pant, R.K. Bisht, D. Arora Weak reciprocal continuity and fixed point theorems, Ann. Univ. Ferrara 57 (2011), 181-190.
- [12] H.K. Pathak, Y.J. Cho, S.M. Kang Remarks of R-weakly commuting mappings and common fixed point theorems, Bull. Korean Math. Soc. 34 (1997), 247-257.
- [13] S. Sessa On a weak commutativity condition of mappings in fixed point considerations, Publ. Inst. Math. (Beograd) (N.S.) 32 (1982), no. 46, 149-153