Dedicated to Professor Yeol Je Cho on the occasion of his retirement

Improvements on Bogin-type fixed point theorems in complete metric spaces

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ABSTRACT.

We improve Bogin-type fixed point theorems in complete metric spaces. We also compare these theorems with a Ćirić-type fixed point theorem and others.

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REFERENCES

- [1] Bogin, I., A generalization of a fixed point theorem of Goebel, Kirk and Shimi, Canad. Math. Bull., 19 (1976), 7–12
- [2] Chatterjea, S. K., Fixed-point theorems, C. R. Acad. Bulgare Sci., 25 (1972), 727-730
- [3] Ćirić, Lj. B., A generalization of Banach's contraction principle, Proc. Amer. Math. Soc., 45 (1974), 267–273
- [4] Jachymski, J., Remarks on contractive conditions of integral type, Nonlinear Anal., 71 (2009), 1073–1081
- [5] Kannan, R., Some results on fixed points II, Amer. Math. Monthly, 76 (1969), 405-408
- [6] Kikkawa, M. and Suzuki, T., Fixed point theorems for new nonlinear mappings satisfying Condition (CC), Linear Nonlinear Anal., 1 (2015), 37-52
- [7] Kikkawa, M. and Suzuki, T., A direct proof of some resent generalization of both Ciric's and Bogin's fixed point theorems, Bull. Kyushu Inst. Technol., 64 (2017), 13-19
- [8] Kikkawa, M. and Suzuki, T., Fixed point theorems for Cirić type contractions and others in complete metric spaces, Linear Nonlinear Anal., 3 (2017), 111–120
- [9] Reich, S., Some remarks concerning contraction mappings, Canad. Math. Bull., 14 (1971), 121–124
- [10] Suzuki, T., Fixed point theorems for a new nonlinear mapping similar to a nonspreading mapping, Fixed Point Theory Appl., 2014, 2014:47
- [11] Suzuki, T., Some notes on generalizations of both Ćirić's and Bogin's fixed point theorems, Pure Appl. Funct. Anal., 2 (2017), No. 4, 677-684
- [12] Suzuki, T. and Kikkawa, M., Generalizations of both Ciric's and Bogin's fixed point theorems, J. Nonlinear Convex Anal., 17 (2016), 2183-2196

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