

FIXED POINT AND HOMOTOPY RESULT FOR MAPPINGS SATISFYING AN IMPLICIT RELATION

I. ALTUN AND D. TURKOGLU

Department of Mathematics

Faculty of Science and Arts, Gazi University

06500 Teknikokullar, Ankara, Turkey

e-mail: ialtun@gazi.edu.tr

e-mail: dturkoglu@gazi.edu.tr

Abstract

In this paper, we prove some fixed point theorems for single valued mappings satisfying an implicit relation on space with two metrics. In addition we give a homotopy result using our theorems.

Keywords and phrases: fixed point, implicit relation, homotopy result.

2000 Mathematics Subject Classification: Primary 54H25;
Secondary 47H10.

REFERENCES

- [1] R.P. Agarwal and D. O'Regan, *Fixed point theory for generalized contraction on space with two metrics*, J. Math. Anal. Appl. **248** (2000), 402–414.
- [2] R.P. Agarwal, D. O'Regan and M. Sambandham, *Random and deterministic fixed point theory for generalized contractive maps*, Appl. Anal. **83** (7) (2004), 711–725.
- [3] G.E. Hardy and T.G. Rogers, *A generalization of a fixed point theorem of Riech*, Canad. Math. Bull. **16** (1973), 201–206.
- [4] M. Imdad, S. Kumar and M.S. Khan, *Remarks on some fixed point theorems satisfying implicit relations*, Rad. Math. **11** (1) (2002), 135–143.

- [5] V. Popa, *A general coincidence theorem for compatible multivalued mappings satisfying an implicit relation*, Demonstratio Math. **33** (1) (2000), 159–164.
- [6] V. Popa, *Some fixed point theorems for compatible mappings satisfying an implicit relation*, Demonstratio Math. **32** (1) (1999), 157–163.
- [7] S. Sharma and B. Desphande, *On compatible mappings satisfying an implicit relation in common fixed point consideration*, Tamkang J. Math. **33** (3) (2002), 245–252.

Received 15 September 2006