Fixed Point Theory, 11(2010), No. 2, 323-326 http://www.math.ubbcluj.ro/~nodeacj/sfptcj.html

EQUIDIFFERENTIABILITY OF SUBSETS OF INFINITELY DIFFERENTIABLE FUNCTION SPACES

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Dedicated to Wataru Takahashi on the occasion of his retirement

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Abstract. In this paper, the concept of equidifferentiability, which is analogous to the concept of equicontinuity, is introduced and this concept is applied to some relations between the sets consisting of finitely equidifferentiable functions defined on [0, 1] and the sets consisting of infinitely equidifferentiable functions defined on [0, 1]. Moreover, fixed point theorems for the finitely differentiable function spaces and those for the infinitely differentiable function spaces are remarked.

Key Words and Phrases: Equicontinuity, equidifferentiability, Schauder's fixed point theorem, Tychonoff's fixed point theorem.

2010 Mathematics Subject Classification: 54C35, 26A24, 47H10.

Acknowledgments. One of the authors would like to express his hearty thanks to all the members of the organizing committee for their warmhearted hospitality presented in the 9th International Conference on Fixed Point Theory and Applications 2009.

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The paper was presented at The 9th International Conference on Fixed Point Theory and Its Applications, July 16-22, 2009, National Changhua University of Education, Changhua, Taiwan (R.O.C.).

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Received: December 31, 2009; Accepted: May 2, 2010.

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