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SOME STABILITY RESULTS RELATED TO SOME FIXED POINT THEOREMS

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Abstract. In this paper, we introduce two types of stability and we investigate some fixed point theorems, as Schauder Theorem, Borsuk Theorem and Knaster Lemma, from this viewpoint.

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REFERENCES

[1] C ALSINA AND R. GER, *On some inequalities and stability results related to the exponential function*, J. Inequal. Appl., **2** (1998), 373–380.
[2] SZ. ANDRÁS AND A. R. MÉZÁROS, *Ulam-Hyers stability of dynamic equations on time scales via Picard operators,* Appl. Math. Comput., **219**, 9 (2013), 4853–4864.
[3] V. BERINDE, *On the stability of fixed point procedure*, Bul. Ştiinţ. Univ. Baia Mare, Ser. B, Matematică-Informatică, **18**, 1 (2002), 7–14.
[4] M. BOTA, E. KARAPINAR AND O. MLEŞNIŢE, *Ulam-Hyers stability results for fixed point problems via* α*-*ψ*-contractive mapping in* (b)*-metric space*, Abstr. Appl. Anal., **2013** (2013), Article ID 825293.
[5] J. BRZDĘK, L. CĂDARIU AND K. CIEPLIŃSKI, *Fixed Point Theory and the Ulam Stability*, J. of Func. Spaces, **2014** (2014), Article ID 829419, http://dx.doi.org/10.1155/2014/829419.
[6] P. GĂVRUŢA, S.-M. JUNG AND Y. LI, *Hyers–Ulam stability of mean value points*, Ann. Funct. Anal., **1**, 2 (2010), 68–74.
[7] A. GRANAS AND J. DUGUNDJI, *Fixed Point Theory*, Springer-Verlag, New York, 2003.
[8] D.H. HYERS, *On the stability of the linear functional equation*, Proc. Nat. Acad. Sci. USA, **27** (1941), 222–224.
[9] S. -M. JUNG, *Hyers-Ulam-Rassias Stability of Functional Equations in Nonlinear Analysis*, Springer, New York, 2011.
[10] Y. LI, *Hyers-Ulam Stability of Linear Differential Equations* $y'' = \lambda^2 y$, Thai Journal of Mathematics, **8** (2010), 215–219.
[11] C. MORTICI, M. TH. RASSIAS AND S.-M. JUNG, *On the stability of a functional equation associated with the Fibonacci numbers*, Abstr. Appl. Anal., **2014** (2014), Article ID 546046.
[12] C. MORTICI, M. MONEA AND D. Ş. MARINESCU, *The stability of some points arising from continuous, differential and integral expressions*, Monatsh. Math., **180**, 1 (2015), 101–122, DOI: 10.1007/s00605-015-0779-7.
[13] M. S. MOSLEHIAN AND D. POPA, *On the stability of the first-order linear recurrence in topological vector spaces*, Non. Anal: Theory, Meth. & Appl., **73**, 9 (2010), 2792–2799.
[14] C. T. NGA AND K. NIKODEM, *On approximately convex functions*, Proc. Amer. Math. Soc., **118** (1993), 103–108.
[15] J. C. PARNAMI AND H. L. VASUDEVA, *On the stability of almost convex functions*, Proc. Amer. Math. Soc., **97** (1986), 67–70.
[16] B. E. RHOADES, *Fixed point theorems and stability results for fixed point iteration procedures*, Indian J. Pure Appl. Math., **21**, 1 (1990), 1–9.

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[17] V. RADU, *The fixed point alternative and the stability of functional equations*, Fixed Point Theory, **4**, 1 (2003), 91–96.

[18] I. A. RUS, *Remarks on Ulam stability of the operatorial equations*, Fixed Point Theory, **10**, 2 (2009), 305–320.

[19] I. A. RUS, *Ulam Stability of the Operatorial Equations*, included in book: TH. M. RASSIAS, J. BRZDĘK (EDS.), *Functional Equations in Mathematical Analysis*, Springer, 2010, pp. 287–306.

[20] S.-E. TAKAHASI, T. MIURA AND S. MIYAJIMA, *On the Hyers-Ulam stability of the Banach space-valued differential equation* $y' = \lambda y$, Bull. Korean Math. Soc., **39** (2002), 309–315.

[21] S. M. ULAM, *Problems in Modern Mathematics*, Chap. VI, Science Editions, Wiley, New York, 1964.