New developments in convexity theory

Constantin P. Niculescu
Center for Nonlinear Anlysis and its Applications,
University of Craiova, Craiova 1100, ROMANIA

The aim of our talk is to report on new results concerning:

- the extension of Choquet theory to signed measures

- the nonlinear theory of integration associated to means

- Jensen inequality for arbitrary positive measures (the results of Paolo Roselli and Michel Willem)

References

[1] S. S. Dragomir, *On Hadamard's inequality for the convex mappings defined on a ball in the space and applications*, Math. Inequal. & Appl., **3** (2000), 177-187.

[2] A. M. Fink, *A best possible Hadamard inequality*, Math. Inequal. & Appl., **1** (1998), 223-230.

[3] Fuchs L., *A new proof of an inequality of Hardy, Littlewood and Polya*, Mat. Tidsskr. B., 1947, pp. 53-54.

[4] D. S. Mitrinović, J. E. Pečarić and A. M. Fink, *Classical and new Inequalities in Analysis*, Kluwer Academic Publ., Dordrecht, 1993.

[5] C. P. Niculescu, *Convexity according to the geometric mean*, Math. Inequal. Appl., **3** (2000), 155-167.

[6] C. P. Niculescu, *A Note on the Dual Hermite-Hadamard Inequality,* The Math. Gazette, July 2001.

[7] C. P. Niculescu, *A multiplicative mean value and its applications.* In vol. *Theory of Inequalities and Applications*, Nova Science Pubblishers (USA), 2001, edited by Y.J. Cho, S.S. Dragomir and J. Kim.

[8] C. P. Niculescu, *An extension of Chebyshev's Inequality and its Connection with Jensen's Inequality,* J. of Inequal. & Appl. **6** (2001), 451-462.

[9] C. P. Niculescu, *The Hermite-Hadamard inequality for functions of a vector variable*. Preprint

[10] C. P. Niculescu, *Convexity according to means*. Preprint

[11] R. R. Phelps, *Lectures on Choquet's Theorem*, D. van Nostrand Company Inc., Princeton, 1966.

[12] P. Roselli and M. Willem, *A convexity inequality*, Amer. Math. Monthly, to appear.