FUNCTIONALS RELATED TO THE DEC INEQUALITY

LUDMILA NIKOLOVA AND SANJA VAROŠANEC

Abstract. We consider the so-called DEC inequality via theory of isotonic linear functionals. The DEC inequality is a refinement of the well-known Cauchy inequality and its well-known particular cases are the Milne and the Callebaut inequalities. We also investigate properties of some functionals which are arised from the DEC inequality.

REFERENCES

[1] D. BALEANU, S. D. PUROHIT, P. AGARWAL, *On fractional integral inequalities involving hypergeometric operators*, Chinese Journal of Mathematics Volume 2014 (2014), Article ID 609476.

[2] W. W. BRECKNER, *Stetigkeitsaussagen fur eine Klasse verallgemeinerter konvexer funktionen in topologischen linearen Raumen*, Publ. Inst. Math. **23** (1978), 13–20.

[3] M. BOHNER, A. PETERSON, *Dynamic equations on time scales: An introduction with applications*, Birkhäuser, Boston, 2001.

[4] D. K. CALLEBAUT, *Generalization of the Cauchy-Schwarz inequality*, J. Math. Anal. Appl. **12** (1965), 491–494.

[5] D. E. DAYKIN, C. J. ELIEZER AND C. CARLITZ, *Problem 5563*, Amer. Math. Monthly, **75** (1968), p. 198 and **76** (1969), 98–100.

[6] S. S. DRAGOMIR, *Refinements of the Cauchy-Bunyakovsky-Schwarz inequality for functions of self-adjoint operators in Hilbert spaces*, Linear and Multilinear Algebra, **59** (7) (2011), 711–717.

[7] V. S. KIRYAKOVA, *Generalized fractional calculus and applications*, Pitman Res. Notes in Math. Ser. 301. Longman – J. Wiley, Harlow – N. York, (1994).

[8] E. A. MILNE, *Note on Rosseland's integral for the stellar absorption coefficient*, Monthly Notices of the Royal Astronomical Society, **85** (1925), 979–984.

[9] D. S. MITRINOVIĆ, J. E. PEČARIĆ, A. M. FINK, *Classical and New Inequalities in Analysis*, Kluwer Academic Publishers, Dordrecht-Boston-London, 1993.

[10] E. NEUMAN, J. SÁNDOR, *On the Schwab-Borchardt mean*, Math. Pannon. **14** (2) (2003), 253–266.

[11] L. NIKOLOVA, S. VAROŠANEC, *Properties of some functionals associated with h-concave functions with applications on inequalities*, J. Inequal. Appl. **2014**, 2014:30.

[12] J. E. PEČARIĆ, F. PROSCHAN, Y. L. TONG, *Convex Functions, Partial Orderings, and Statistical Applications*, Academic Press Inc, Boston, 1992.

[13] S. M. SITNIK, *Generalized Young and Cauchy-Bunyakowsky inequalities with applications: a surwey*, Advances in Modern Analysis, Mathematical Forum Series, Ed. Yu. F. Korobeinik, A. G. Kursaev, 2009, 221–266.

[14] S. VAROŠANEC, *On h-convexity*, J. Math. Anal. Appl. **326** (2007), 303–311.

[15] A. WITKOWSKI, *On Seiffert-like means*, ArXiv:1209.1244v1 [math.CA] 5 Sep 2013.

Journal of Mathematical Inequalities
www.ele-math.com
jmi@ele-math.com