

Chebyshev Type Inequalities for Synchronous Vectors in Banach Spaces

ZDZISŁAW OTACHEL

Abstract. In [3] Chebyshev type inequalities are proved for separable finite sequences. In this paper, the applicability of that notion is extended and replaced by a relation of synchronicity. In consequence, new sufficient conditions for Chebyshev type inequalities are derived.

Mathematics subject classification (2010): 26D15, 26D20, 46B99.

Keywords and phrases: Chebyshev type inequality, convex cone, dual cone, separable sequence, synchronous vectors.

REFERENCES

- [1] D.S. MITRINOVIĆ, *Analytic inequalities*, Springer-Verlag, Berlin/New York, (1970).
- [2] C.P. NICULESCU, F. POPOVICI, *The extension of majorization inequalities within the frame of relative convexity*, J. Inequal. Pure Appl. Math., **7**, 1 (2006), Article 27.
- [3] M. NIEZGODA, *Bifractional inequalities and convex cones*, Discrete Math., **306**, 2 (2006), 231–243.
- [4] M. NIEZGODA, *Remarks on convex functions and separable sequences*, Discrete Math., **308** (2008), 1765–1773.
- [5] Z. OTACHEL, *Spectral orders and isotone functionals*, Linear Algebra Appl., **252** (1997), 159–172.
- [6] Z. OTACHEL, *Chebyshev inequalities and self-dual cones*, J. Inequal. Pure Appl. Math., **10**, 2 (2009), Article 54.
- [7] J.E. PEČARIĆ, F. PROSCHAN, AND Y.L. TONG, *Convex functions, partial orderings, and statistical applications*, Mathematics in Science and Engineering, volume 187, Academic Press, Inc. (1992).
- [8] I. SINGER, *Bases in Banach Spaces I*, Springer-Verlag (1970).
- [9] GH. TOADER, *Integral and discrete inequalities*, Rev. Anal. Numér. Théor. Approx., **21**, 1 (1992), 83–88.
- [10] GH. TOADER, *Fujiwara's inequality for functionals*, Facta Univ. Nis, **7** (1992), 43–48.
- [11] GH. TOADER, *On Chebyshev's inequality for sequences*, Discrete Math., **161** (1996), 317–322.