

## ON SOME INEQUALITIES EQUIVALENT TO THE WRIGHT-CONVEXITY

ANDRZEJ OLBRYŚ

*Abstract.* In the present paper we establish some conditions and inequalities equivalent to the Wright-convexity.

*Mathematics subject classification (2010):* 39B62, 26A51, 26B25.

*Keywords and phrases:* Convexity, Jensen-convexity, Wright-convexity.

### REFERENCES

- [1] B. C. ARNOLD, A. W. MARSHALL, I. OLKIN, *Inequalities: Theory of Majorization and Its Applications*, Springer Series in Statistics, New York-Dordrecht-Heidelberg-London, 2011 (Second Edition).
- [2] V. CIOBOTARIU-BOER, *Hermite-Hadamard and Fejér Inequalities for Wright-convex functions*, *Ocotogon Math. Magazine* **17**, 1 (2009), 53–69.
- [3] S. S. DRAGOMIR, *Two mappings in connection to Hadamard's inequalities*, *Math. Anal. Appl.* **167**, 1 (1992), 49–56.
- [4] S. S. DRAGOMIR AND C. E. M PEARCE, *Selected Topics on Hermite-Hadamard Inequalities and Applications*, RGMIA Monographs, Victoria University, 2002.
- [5] N. ELEZOVIĆ, J. PEČARIĆ, *A note on Schur-convex functions*, *Rocky Mountain J. Math.* **30**, 3 (2000).
- [6] J. HADAMARD, *Étude sur les propriétés entières et en particulier d'une fonction considérée par Riemann*, *J. Math. Pures Appl.* **58** (1893), 171–215.
- [7] G. HARDY, J. E. LITTLEWOOD AND G. PÓLYA, *Inequalities*, 1st ed., 2nd ed., Cambridge Univ. Press, Cambridge, London and New York, 1934, 1952.
- [8] CH. HERMITE, *Sur deux limites d'une intégrale définie*, *Mathesis* **3** (1883), 82.
- [9] M. IN HO, *Fejér inequalities for Wright-convex functions*, *J. Inequal. Pure and Appl. Math.* **8**, 1 (2007), Art. 9, 9 pp.
- [10] Z. KOMINEK, *Convex Functions in Linear Spaces*, *Prace Naukowe Uniwersytetu Śląskiego w Katowicach* nr. 1087, Katowice, 1989.
- [11] Z. KOMINEK, *On additive and convex functionals*, *Radovi Mat.* **3** (1987), 267–279.
- [12] M. KUCZMA, *An introduction to the theory of functional equations and inequalities*, Polish Scientific Publishers and Silesian University Press, Warszawa-Kraków-Katowice, 1985.
- [13] GY. MAKSA, ZS. PÁLES, *Decomposition of higher-order Wright-convex functions*, *J. Math. Anal. Appl.* **359** (2009), 439–443.
- [14] C. T. NG, *Functions generating Schur-convex sums*, W. Walter (Ed.), *General Inequalities*, S. Oberwolfach, 1986, *Internat. Ser. Numer. Math.* vol. 80, Birkhäuser, Boston, 1987, pp. 433–438.
- [15] C. P. NICULESCU AND L. E. PERSSON, *Convex Functions and their Applications*, *A Contemporary Approach CMS Books in Mathematics* vol. 23, Springer-Verlag, New York, 2006.
- [16] K. NIKODEM, *On some class of midconvex functions*, *Ann. Polon. Math.* **50** (1989), 145–151.
- [17] A. OLBRYŚ, *Representation theorems for  $t$ -Wright convexity*, *J. Math. Anal. Appl.* **384**, 2 (2011), 273–283.
- [18] J. PEČARIĆ, F. PROSCHAN, Y. L. TONG, *Convex Functions, Partial Orderings, and Statistical Applications*, Acad. Press, Inc., Boston, 1992.
- [19] A. W. ROBERTS, D. E. VARBERG, *Convex Functions*, Academic Press, New York and London, 1973.
- [20] R. T. ROCKAFELLER, *Convex Analysis*, Princeton Univ. Press, Princeton, NJ, 1970.
- [21] I. SCHUR, *Über eine Klasse von Mittelbildungen mit Anwendungen auf die Determinanten theorie*, *Sitzungsber. Berlin. Math. Ges.* **22** (1923), 9–20.

- [22] BRIAN S. THOMSON, *Symmetric properties of real functions*, Pure and Applied Mathematics, New York-Basel-Hong Kong, 1994.
- [23] K. L. TSENG, G. S. YANG AND S. S. DRAGOMIR, *Hadamard inequalities for Wright-convex functions*, *Demonstratio Math.* **37**, 3 (2004), 525–532.
- [24] E. M. WRIGHT, *An inequality for convex functions*, *Amer. Math. Monthly* **61** (1954), 620–622.
- [25] L. ZALINESCU, *Convex Analysis in General Vector Spaces*, World Scientific, New Jersey, 2002.