

HADAMARD–TYPE INEQUALITIES FOR GENERALIZED CONVEX FUNCTIONS

MIHÁLY BESSENYEI AND ZSOLT PÁLES

Abstract. In this paper we investigate (ω_1, ω_2) -convex functions and obtain characterization theorems and Hadamard-type inequalities for them.

Mathematics subject classification (2000): 26A51, 26B25.

Key words and phrases: Please, write a few key words.

REFERENCES

- [1] E. F. BECKENBACH, *Generalized convex functions*, Bull. Amer. Math. Soc. **43** (1937), 363–371.
- [2] E. F. BECKENBACH AND R. H. BING, *On generalized convex functions*, Trans. Amer. Math. Soc. **58** (1945), 220–230.
- [3] A. BEN-TAL AND A. BEN-ISRAEL, *A generalization of convex functions via support properties*, J. Austral. Math. Soc. Ser. A **21** (1976), no. 3, 341–361.
- [4] M. BESSENYEI AND ZS. PÁLES, *Higher-order generalizations of Hadamard's inequality*, Publ. Math. Debrecen **61** (2002), no. 3-4, 623–643.
- [5] F. F. BONSALE, *The characterization of generalized convex functions*, Quart. J. Math., Oxford Ser. (2) **1** (1950), 100–111.
- [6] D. BRYDAK, *Applications of generalized convex functions to second order differential inequalities*, General Inequalities, 4 (Oberwolfach, 1983) (E. F. Beckenbach and W. Walter, eds.), International Series of Numerical Mathematics, vol. 71, Birkhäuser, Basel, 1984, pp. 297–305.
- [7] S. S. DRAGOMIR AND C. E. M. PEARCE, *Selected Topics on Hermite-Hadamard Inequalities*, RGMIA Monographs (http://rgmia.vu.edu.au/monographs/hermite_hadamard.html), Victoria University, 2000.
- [8] J. HADAMARD, *Étude sur les propriétés des fonctions entières et en particulier d'une fonction considérée par riemann*, J. Math. Pures Appl. **58** (1893), 171–215.
- [9] J. KRZYSZKOWSKI, *Approximately generalized convex functions*, Math. Pannon. **12** (2001), no. 1, 93–104.
- [10] M. KUCZMA, *An Introduction to the Theory of Functional Equations and Inequalities*, Państwowe Wydawnictwo Naukowe — Uniwersytet Śląski, Warszawa–Kraków–Katowice, 1985.
- [11] D. S. MITRINOVIĆ AND I. B. LACKOVIĆ, *Hermite and convexity*, Aequationes Math. **28** (1985), 229–232.
- [12] E. MOLDOVAN, *Sur une généralisation de la notion de convexité*, Acad. R. P. Romine. Fil. Cluj. Stud. Cerc. Şti. Ser. I **6** (1955), no. 3-4, 65–73.
- [13] C. P. NICULESCU AND L.-E. PERSSON, *Old and new on the Hermite-Hadamard inequality*, manuscript.
- [14] M. M. PEIXOTO, *On the existence of derivatives of generalized convex functions*, Summa Brasil. Math. **2** (1948), no. 3, 35–42.
- [15] M. M. PEIXOTO, *Generalized convex functions and second order differential inequalities*, Bull. Amer. Math. Soc. **55** (1949), 563–572.
- [16] M. M. PEIXOTO, *On convexity*, Anais Acad. Brasil. Ci. **21** (1949), 291–302.
- [17] T. POPOVICIU, *Les fonctions convexes*, Hermann et Cie, Paris, 1944.
- [18] A. W. ROBERTS AND D. E. VARBERG, *Convex Functions*, Academic Press, New York–London, 1973.