

## ON APPLICATIONS OF INEQUALITIES FOR QUASIDEVIATION MEANS IN ACTUARIAL MATHEMATICS

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**Abstract.** Applying the results of Zs. Páles, concerning the inequalities for quasideviation means, we characterize some natural properties of implicitly defined functional stemming from actuarial mathematics.

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### REFERENCES

- [1] N. L. BOWERS, H. U. GERBER, J. C. HICKMAN, D. A. JONES AND C. J. NESBITT, *Actuarial Mathematics*, The Society of Actuaries, Itasca Illinois, 1986.
- [2] H. BÜHLMANN, *Mathematical Models in Risk Theory*, Springer, Berlin, 1970.
- [3] Z. DARÓCZY, *A general inequality for means*, *Aequationes Math.* **7** (1971), 16–21.
- [4] Z. DARÓCZY, *Über eine Klasse von Mittelwerten*, *Publ. Math. Debrecen* **19** (1972), 211–217.
- [5] Z. DARÓCZY AND ZS. PÁLES, *On comparison of mean values*, *Publ. Math. Debrecen* **29** (1982), 107–115.
- [6] H. U. GERBER, *An Introduction to Mathematical Risk Theory*, S. S. Huebner Foundation, Homewood Illinois: R. D. Irwin Inc., 1979.
- [7] S. HEILPERN, *A rank-dependent generalization of zero utility principle*, *Insurance: Mathematics and Economics* **33** (2003), 67–73.
- [8] M KALUSZKA AND M. KRZESZOWIEC, *Pricing insurance contracts under Cumulative Prospect Theory*, *Insurance: Mathematics and Economics* **50** (2012), 159–166.
- [9] M. KUCZMA, *An Introduction to the Theory of Functional Equations and Inequalities*, Birkhäuser, Berlin, 2009.
- [10] L. LOSONCZI, *General inequalities for nonsymmetric means*, *Aequationes Math.* **9** (1973), 221–235.
- [11] ZS. PÁLES, *Characterization of quasideviation means*, *Acta. Math. Sci. Hungar.* **40** (1982), 243–260.
- [12] ZS. PÁLES, *General inequalities for quasideviation means*, *Aequationes Math.* **36** (1988), 32–56.
- [13] S. T. RACHEV, L. B. KLEBANOV, S. V. STOYANOV AND F. J. FABOZZI, *The Methods of Distances in the Theory of Probability and Statistics*, Springer, New York, 2013.
- [14] T. ROLSKI, H. SCHMIDLI, V. SCHMIDT AND J. TEUGELS, *Stochastic Processes for Insurance and Finance*, John Wiley & Sons, New York, 1999.