

A NOTE ON SUMS OF POWERS

PENG GAO

Abstract. We improve a result of Bennett concerning certain sequences involving sums of powers of positive integers.

Mathematics subject classification (2010): 26D15.

Keywords and phrases: Majorization principle, sums of powers.

REFERENCES

- [1] H. ALZER, *On an inequality of H. Minc and L. Sathre*, J. Math. Anal. Appl., **179** (1993), 396–402.
- [2] H. ALZER, *Refinement of an inequality of G. Bennett*, Discrete Math., **135** (1994), 39–46.
- [3] E. F. BECKENBACH AND R. BELLMAN, *Inequalities*, Springer-Verlag, Berlin-Göttingen-Heidelberg, 1961.
- [4] G. BENNETT, *Lower bounds for matrices. II.*, Canad. J. Math., **44** (1992), 54–74.
- [5] G. BENNETT, *Sums of powers and the meaning of l^p* , Houston J. Math., **32** (2006), 801–831.
- [6] G. BENNETT, *Meaningful sequences*, Houston J. Math., **33** (2007), 555–580.
- [7] P. GAO, *A note on Hardy-type inequalities*, Proc. Amer. Math. Soc., **133** (2005), 1977–1984.
- [8] P. GAO, *Sums of powers and majorization*, J. Math. Anal. Appl., **340** (2008), 1241–1248.
- [9] A. W. MARSHALL AND I. OLKIN, *Inequalities: theory of majorization and its applications*, Academic Press, New York, 1979.
- [10] J. S. MARTINS, *Arithmetic and geometric means, an application to Lorentz sequence spaces*, Math. Nachr., **139** (1988), 281–288.
- [11] Z. K. XU AND D. P. XU, *A general form of Alzer's inequality*, Comput. Math. Appl., **44** (2002), 365–373.