

NEW GENERALIZATIONS OF INEQUALITIES OF HARDY AND LEVIN—COCHRAN—LEE TYPE FOR MULTIDIMENSIONAL BALLS

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Abstract. This paper deals with some new sharp generalizations of inequalities of Hardy and Levin–Cochran–Lee type for n -dimensional balls.

Mathematics subject classification (2000): 26D10, 26D15.

Key words and phrases: Hardy inequality, Levin–Cochran–Lee inequality, best possible constants.

REFERENCES

- [1] M. CHRIST AND L. GRAFAKOS, *Best constants for two nonconvolution inequalities*, Proc. Amer. Math. Soc. **123**, No. 6 (1995), 1687–1693.
- [2] A. ČIŽMEŠIJA AND J. PEČARIĆ, *Mixed means and Hardy's inequality*, Math. Inequal. Appl. **1**, No. 4 (1998), 491–506.
- [3] A. ČIŽMEŠIJA, J. PEČARIĆ, AND I. PERIĆ, *Mixed means and inequalities of Hardy and Levin–Cochran–Lee type for multidimensional balls*, Proc. Amer. Math. Soc. **128**, No. 9 (2000), 2543–2552.
- [4] A. ČIŽMEŠIJA AND J. PEČARIĆ, *Classical Hardy's and Carleman's inequalities and mixed means*, in: T. M. Rassias (ed.), *Survey on Classical Inequalities*, Kluwer Academic Publishers, Dordrecht/Boston/London, 2000, p.p. 27–65.
- [5] A. ČIŽMEŠIJA AND J. PEČARIĆ, *Some new generalisations of inequalities of Hardy and Levin–Cochran–Lee*, Bull. Austral. Math. Soc. **63** (2001), 105–113.
- [6] P. DRÁBEK, H. P. HEINIG, AND A. KUFNER, *Higher dimensional Hardy inequality*, Int. Ser. Num. Math. **123** (1997), 3–16.
- [7] G. HARDY, J. E. LITTLEWOOD, AND G. PÓLYA, *Inequalities*, 2nd edition, Cambridge University Press, Cambridge, 1967.