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On the Lower Bounds of Kottman Constants in Orlicz Function Spaces

Let $L^{(\Phi)}(\Omega)$ and $L^{\Phi}(\Omega)$ be the Orlicz function spaces defined by an N-function Φ, equipped with the gauge norm and the Orlicz norm respectively, where $\Omega = [0,1]$ or $[0,\infty)$. The Kottman constants $K(L^{(\Phi)}(\Omega))$ and $K(L^{\Phi}(\Omega))$ were discussed by M. M. Rao and the author in Chapter 5 of their book "Applications of Orlicz Spaces" [Marcel Dekker Inc., New York, 2002]. The author obtains some improvments on the lower bounds of these constants in Section 2 (Theorems 1 and 2). Several examples are given in Section 3 which will be used to make comments upon the papers of Y. Q. Yan [On the exact value of packing spheres in a class of Orlicz function spaces, J. Convex Analysis 11(2) (2004) 391–400], and J. Han and X. L. Li [Exact value of packing spheres constant in class of Orlicz function spaces (in Chinese), J. Tongji Univ. 30(7) (2002) 895–899].

Keywords: Orlicz function space, Kottman constant and packing constant.

MSC: 46B30