A. Kamińska
Dept. of Mathematical Sciences, University of Memphis, Memphis, TN 38152-3240, U.S.A.
`kaminska@memphis.edu`

H.-J. Tag
Dept. of Mathematical Sciences, University of Memphis, Memphis, TN 38152-3240, U.S.A.
`htag@memphis.edu`

Diameter of Weak Neighborhoods and the Radon-Nikodým Property in Orlicz-Lorentz Spaces

Given an Orlicz N-function φ and a positive decreasing weight w, we present criteria for the diameter two property and for the Radon-Nikodým property in the Orlicz-Lorentz function and the sequence spaces $\Lambda_{\varphi,w}$ and $\lambda_{\varphi,w}$. We show that in the spaces $\Lambda_{\varphi,w}$ and $\lambda_{\varphi,w}$, equipped with the Luxemburg norm, the diameter of any relatively weakly open subset of the unit ball in these spaces is two if and only if φ does not satisfy the appropriate Δ_2-condition, while they have the Radon-Nikodým property if and only if φ satisfies the appropriate Δ_2-condition.

Keywords: Diameter two property, Radon-Nikodym property, Orlicz-Lorentz space.

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