MR1280720 (95g:46047) 46E30 (46A80 47H09)
Aksoy, A. G. (1-CMKC); **Baillon, J.-B.** (F-LYON-MI)
Measures of non-compactness in Orlicz modular spaces. (English summary)
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The Orlicz space L^Ψ has two topological structures, one induced by the Orlicz modular ρ and the second by the Luxemburg norm $\| \|_\rho$. Both are equivalent if and only if Ψ satisfies the Δ_2-condition. The norm nth width of a norm bounded set D is defined by $d^n_{\| \|}(D) = \inf\{r > 0\colon\ D \subset B(r) + A_n\}$, where $B(r)$ is a ball of radius r and A_n is a vector space of $\dim A_n \leq n$. An analogous definition can be given for the modular ρ structure $(d^n_\rho(D))$. Finally, the norm-ball measure of noncompactness for D is defined as $\alpha_{\| \|}(D) = \{r > 0\colon D \subseteq \bigcup_{i=1}^k B(x_i, r)\}$. An analogous definition can be proposed by using ρ-balls.

The authors study the relations between $\alpha_{\| \|}(D)$, $d^n_{\| \|}(D)$, $\alpha_\rho(D)$, and $d^n_\rho(D)$. The simplest and the most obvious is $\alpha_{\| \|}(D) = \lim_{n\to\infty} d^n_{\| \|}(D)$.

{For the entire collection see MR1280719 (95a:46001)}

Reviewed by *K. Goebel*