

d_1, d_2, d_3 positive integer. $\Omega \subset \mathbb{R}^{d_1}$, $m(\Omega) < \infty$ y $f : \Omega \times \mathbb{R}^{d_2} \rightarrow \mathbb{R}^{d_3}$.

For Orlicz Spaces we will use the Orlicz norm.

Nemitski operator

$$\mathbf{f}u(x) = f(x, u(x))$$

maps \mathbb{R}^{d_2} -valued functions defined on $\Omega \subset \mathbb{R}^{d_1}$ into \mathbb{R}^{d_3} -valued functions defined on $\Omega \subset \mathbb{R}^{d_1}$. Measurability seems follows the same lines that [2, p. 349].???

Let $\Phi_1 : \mathbb{R}^{d_2} \rightarrow \mathbb{R}$ and $\Phi_2 : \mathbb{R}^{d_3} \rightarrow \mathbb{R}$ be anisotropic N -functions.

Poner enunciado Theorem similar to [1, Lemma 17.1]

Let $u \in \Pi(E_{d_2}^\Phi, r)$ be. Adapting the [3, Prop. 3, p. 92-93] to \mathbb{R}^d -valued functions (see also [] By [4, Th. 5.5]) (???) we obtain a set $A \subset \Omega$ such that $\|u - \chi_A u\|_{L^\Phi(\Omega, \mathbb{R}^{d_2})}$

References

- [1] M. A. Krasnosel'skiĭ and Ja. B. Rutickiĭ. *Convex functions and Orlicz spaces*. P. Noordhoff Ltd., Groningen, 1961.
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- [3] M. M. Rao and Z. D. Ren. *Theory of Orlicz spaces*, volume 146. Marcel Dekker, Inc., New York, 1991.
- [4] Gudrun Schappacher. A notion of orlicz spaces for vector valued functions. *Applications of Mathematics*, 50(4):355–386, 2005.