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Journal of Convex Analysis 21 (2014) 201–218

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Multivalued Equations on a Bounded Domain via Minimization on Orlicz-Sobolev Spaces

We exploit minimization of locally Lipschitz functionals defined on Orlicz-Sobolev spaces along with convexity techniques, to investigate existence of solution of the multivalued equation $-\Delta_{\Phi}u \in \partial j(\cdot, u) + h$ in Ω , where $\Omega \subset \mathbf{R}^N$ is a bounded smooth domain, $\Phi : \mathbf{R} \rightarrow [0, \infty)$ is an N-function, Δ_{Φ} is the corresponding Φ -Laplacian, h is a measure on Ω and $\partial j(\cdot, u)$ stands for the Clarke generalized gradient of a function j linked with critical growth. Regularity of the solutions is addressed as well.

Keywords: Minimization, convexity, Orlicz-Sobolev space.