On one extension theorem dealing with weighted Orlicz-Slobodetskii space on the boundary of domain

<u>Raj Narayan Dhara</u>^{*}, Agnieszka Kałamajska

Faculty of Mathematics, Informatics and Mechanics, University of Warsaw, Poland rndhara@gmail.com, kalamajs@mimuw.edu.pl

Let Ω be a given domain with the sufficiently regular boundary. We prove that every function belonging to a certain weighted Orlicz-Slobodetskii space defined on the boundary of Ω can be extended to a function belonging to a relevant weighted Orlicz-Sobolev space defined on the whole Ω . Analysis of the admitted weights is provided and no restrictions on generating Orlicz function is required.

References

- [1] E. Gagliardo: Caratterizzazioni delle tracce sulla frontiera relative ad alcune classi di funzioni in n variabili. Rend. Sem. Mat. Univ. Padova 27 (1957), 284–305. (In Italian.)
- J.-P. Gossez: Nonlinear elliptic boundary value problems for equations with rapidly (or slowly) increasing coefficients. Trans. Am. Math. Soc. 190 (1974), 163–205.
- [3] A. Kałamajska, M. Krbec: Traces of Orlicz-Sobolev functions under general growth restrictions. Math. Nachr. 286 (2013), 730-742.
- [4] M.-Th. Lacroix: Espaces de traces des espaces de Sobolev-Orlicz. J. Math. Pures Appl. 53 (1974), 439–458. (In French.)

^{*}This work was done when R.N.D. was visiting Faculty of Mathematics, Informatics and Mechanics under KNOW (Warsaw Center of Mathematics and Computer Science) scholarship in spring semester 2012/2013.