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On solutions of nonlinear elliptic equations with variable exponents and irregular data

Communication Info

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Abstract

In this work, we prove existence and regularity of weak solutions for a class of p(x)-Laplacian equations with variable exponents and L^m data, with m being small. The functional setting involves Lebesgue−Sobolev spaces with variable exponents.
The study of our problem in [4] is a new and interesting topic. Inspired by [1], [2] and [3] we prove the existence of weak solution for our problem with right-hand side in L^m and the variable exponent p(x) satisfies a condition of regularity.
The main steps of the proof consist of obtaining uniform estimates for suitable approximate problems and then passing to the limit.

Keywords:
(1) p(x)-Laplacian equations,
(2) Weak solution,
(3) Variable exponents,
(3) L^m data.

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