ON THE BEHAVIOUR OF THE SOLUTIONS TO
p-LAPLACIAN EQUATIONS AS p GOES TO 1

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Abstract

In the present paper we study the behaviour as \( p \) goes to 1 of the
weak solutions to the problems

\[
\begin{cases}
- \text{div} (|\nabla u_p|^{p-2} \nabla u_p) = f & \text{in } \Omega \\
u_p = 0 & \text{on } \partial \Omega,
\end{cases}
\]

where \( \Omega \) is a bounded open set of \( \mathbb{R}^N \) \( (N \geq 2) \) with Lipschitz
boundary and \( p > 1 \). As far as the datum \( f \) is concerned, we
analyze several cases: the most general one is \( f \in W^{-1,\infty}(\Omega) \).
We also illustrate our results by means of remarks and examples.

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