BOUNDARY BEHAVIOR OF LARGE SOLUTIONS TO QUASILINEAR ELLIPTIC PROBLEMS WITH A NONLINEAR GRADIENT TERM

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Abstract. In this paper, we study the boundary behavior of solutions to boundary blow-up elliptic problems

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\begin{cases}
\text{div}(|\nabla u|^{m-2}\nabla u) \pm |\nabla u(x)|^{q(m-1)} = b(x)f(u), & x \in \Omega, \\
u > 0, & x \in \Omega, \\
|u|_{\partial \Omega} = +\infty,
\end{cases}
\]

where $\Omega$ is a bounded domain with smooth boundary in $\mathbb{R}^N$, $m > 1$, $q > 0$, $b \in C^\alpha(\overline{\Omega})$, which is positive in $\Omega$ and may be vanishing on the boundary and rapidly varying near the boundary, and $f$ is rapidly varying or normalized regularly varying at infinity.


Keywords and phrases: Large solutions, quasilinear elliptic equation, asymptotic behavior, boundary blow-up, nonlinear gradients.

REFERENCES


