

POSITIVE SOLUTIONS FOR SINGULAR PROBLEMS INVOLVING THE p -LAPLACIAN

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Resumo/Abstract:

Let Ω be a bounded open interval, let $p > 1$ and $\gamma > 0$, and let $m : \Omega \rightarrow \mathbb{R}$ be a function that may change sign in Ω . We study the existence and nonexistence of positive solutions for one-dimensional singular problems of the form

$$\begin{cases} -(|u'|^{p-2} u')' = m(x) u^{-\gamma} & \text{in } \Omega \\ u > 0 & \text{in } \Omega \\ u = 0 & \text{on } \partial\Omega. \end{cases}$$

In the particular case $p = 2$ we also obtain results for the corresponding n -dimensional problem.

This communication is based on the papers [1] and [2].

References

- [1] T. GODOY, U. KAUFMANN, *On Dirichlet problems with singular nonlinearity of indefinite sign*, J. Math Anal. 428 (2015), 1239-1251.
- [2] U. KAUFMANN, I. MEDRI, *One-dimensional singular problems involving the p -Laplacian and nonlinearities indefinite in sign*, Advances in Nonlinear Analysis, to appear.