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Existence of infinitely many solutions to \((2, p)\)-Laplacian equations with non-odd perturbation terms. (Chinese. English summary) [Zbl 07494953]

Summary: In this paper, the \((2, p)\)-Laplacian equations with non-odd perturbation terms

\[
\begin{cases}
-\Delta u - \Delta_p u = a(x)|u|^{q-2}u + f(x, u), & x \in \Omega, \\
u = 0, & x \in \partial\Omega
\end{cases}
\]

are considered, where \(\Omega \subset \mathbb{R}^N\) is a smooth bounded domain, \(1 < q < 2 < p < N\), \(a \in C(\bar{\Omega})\) is allowed to change sign, and \(f\) may not be odd in \(u\). Using the variational method, we obtain the existence of infinitely many solutions to the above equations.

MSC:
35J92 Quasilinear elliptic equations with \(p\)-Laplacian
35A15 Variational methods applied to PDEs

Keywords:
(2, \(p\))-Laplacian equations; non-odd perturbation terms; variational method; infinitely many solutions

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