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Infinitely many solutions to a class of $p$-Laplace equation without the Ambrosetti-Rabinowitz condition. (Chinese. English summary) [Zbl 07366864]

Summary: Using variational methods we prove the existence of infinitely many solutions to a class of $p$-Laplace equation:

$$-\Delta_p u + V(x)|u|^{p-2}u = f(x, u), \quad x \in \mathbb{R}^N,$$

where $1 < p < q < \infty$, $V(x) \geq V_0 > 0$. The nonlinearity $f(x, u)$ doesn’t satisfy the (AR) condition.

MSC:

35J92 Quasilinear elliptic equations with $p$-Laplacian

Keywords:

symmetric mountain pass lemma; $p$-Laplace equation; infinitely many solution; the Ambrosetti-Rabinowitz condition