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Multiple solutions for the coercive semilinear elliptic equations. (English) Zbl 1436.35195
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Summary: In this paper we study the semilinear elliptic equations

$$\begin{cases} -\Delta u = f(x, u), & x \in \Omega, \\ u = 0, & x \in \partial\Omega, \end{cases}$$

where $\Omega \subset \mathbb{R}^N$ is a smooth bounded domain. By using the minimax methods, bifurcation methods, Conley index theory and Morse theory, we obtain six nontrivial solutions for the equations with coercive nonlinearities.

MSC:

35J91 Semilinear elliptic equations with Laplacian, bi-Laplacian or poly-Laplacian
35A01 Existence problems for PDEs: global existence, local existence, non-existence

Keywords:

semilinear elliptic equation with Laplacian; Dirichlet problem; existence of solutions

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