

Multiple solutions for a perturbed Dirichlet problem

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Let us consider the following boundary value problem

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

where $\Omega \subset \mathbb{R}^N$ ($N \geq 2$) is an open bounded set with smooth boundary. We assume that the function f has a superlinear growth near the origin but it increases at most linearly at infinity and r should have a sublinear growth near the origin. Our aim is to obtain at least two weak solutions to this problem.

References

- [1] F. I. Onete, *On a class of quasilinear problems with double-phase reaction and indefinite weight*, An. Univ. Craiova Ser. Mat. Inform. **46** (2019), no. 1, 218–222.
- [2] N. Chorfi, V. D. Rădulescu, *Continuous spectrum for some classes of $(p, 2)$ -equations with linear or sublinear growth*, Miskolc Math. Notes **17** (2016), No. 2, 817–826.

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