ANTISYMMETRIC SOLUTIONS FOR A CLASS GENERALIZED QUASILINEAR SCHRÖDINGER EQUATIONS

JANETE SOARES GAMBOA AND JIAZHENG ZHOU

Abstract. In this paper we consider the existence of antisymmetric solutions for the generalized quasilinear Schrödinger equation in $H^1(\mathbb{R}^N)$:

$$-\text{div}(\vartheta(u)\nabla u) + \frac{1}{2}\vartheta(u)|\nabla u|^2 + V(x)u = f(u) \quad \text{in} \quad \mathbb{R}^N,$$

where $N \geq 3$, $V(x)$ is a positive continuous potential, $f(u)$ is of subcritical growth and $\vartheta : \mathbb{R} \to [1, +\infty)$ is an even $C^1$–function satisfying some suitable hypotheses. By considering a minimizing problem restricted on a partial Nehari manifold, we prove the existence of antisymmetric solutions via deformation lemma.


Keywords and phrases: Quasilinear Schrödinger equation, antisymmetric solutions, Nehari manifold.

REFERENCES


