

**1991 Mathematics Subject classifications:** 34C25, 58E30, 47H04.

**Research area:** Critical Point Theory and its Applications to Differential Equations.

**Research Content:** In this paper, we study the following quasilinear Choquard equations of the form

$$-\Delta u + V(x)u - \Delta(|u|^{2\alpha})|u|^{2\alpha-2}u = (|x|^{-\mu} * G(u))g(u), \quad x \in \mathbb{R}^N,$$

where  $1 \geq \alpha > \frac{1}{2}$ ,  $V \in C(\mathbb{R}^N, \mathbb{R})$ ,  $g \in C(\mathbb{R}^N, \mathbb{R})$ . Distinguished from two situations  $\lim_{|x| \rightarrow \infty} V(x) = +\infty$  or  $\lim_{|x| \rightarrow \infty} V(x) < +\infty$ , we research the existence of nontrivial solutions and sequence of high energy solutions.