

Existence of homoclinic solutions for the non-autonomous fractional Hamiltonian systems

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Abstract

In this research work, we give a new result to guarantee the existence of homoclinic solutions for the nonperiodic fractional Hamiltonian systems $-\{t\}D_{-[\cdot]}^{\alpha}(-\{t\}D_{-[\cdot]}^{\alpha}x(t)) - L(t)x(t) + W(t,x(t)) = 0$, where $\alpha \in (1/2, 1]$, $x \in H^{\alpha}(R, R^N)$, $W \in C^1(R \times R^N, R)$. We assume that $W(t,x)$ do not satisfy the global Ambrosetti-Rabinowitz condition and is not necessarily periodic in t . This result generalizes and improves some existing results in the literature.

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