

Combined effects of double nonlocal terms in the nonlinear eigenvalue problems

Shuai Yao¹ and Haibo Chen²

¹Central South University School of Mathematics and Statistics

²Department of Mathematics, Central South University

February 22, 2022

Abstract

In this paper, we study the following eigenvalue problem for Kirchhoff type equation with Hartree nonlinearity:
$$-\Delta u + \mu V(x)u = \left(I_{\alpha} * Q \left| \left| u \right| \right|^p \right) \left| \left| u \right| \right|^{p-2} u + \lambda f(x)u \quad \text{in } \mathbb{R}^N,$$
 where $N \geq 3$, $\alpha \geq 0$, $\mu > 0$ parameters, $M(t) = at + 1$, $V \in C(\mathbb{R}^N, \mathbb{R}^+)$, I_{α} is the Riesz potential, $Q(x) \in L^{\infty}(\mathbb{R}^N)$ with changes sign in $\overline{\Omega} := \{V(x) = 0\}$, and 0

Hosted file

YC-MMA-submission.pdf available at <https://authorea.com/users/461817/articles/557423-combined-effects-of-double-nonlocal-terms-in-the-nonlinear-eigenvalue-problems>