Review of: "Multiplicity of solutions for nonlocal fractional equations with nonsmooth potentials"

Yousef Gholami[1]

1 Sahand University of Technology

Potential competing interests: No potential competing interests to declare.

This manuscript contains an investigation on the multi-potential fractional-order Laplacian inclusions in fractional Sobolev spaces. The main aim of this investigation is to construct a multiplicity criterion for existence of the weak solutions. In this way, the critical point theory has chosen to enable us to construct a theoretical criterion indicating three weak solutions for considered Laplacian problem. Importance of the weak solutions is that, despite necessity of differentibility of solutions for differential problems, one may transform this problems for instance into correcpobding integral forms and consequently prepare the transformed problem to accept non-differentiable solutions known as the weak solution. So, in this case wider range of differential based problems and related weak solutions can be studied. As a personal opinion, I believe in this fact that these kind of solvability criteria in related literature are very restricted via their numerous hypotheses. For instance, in this manucript the main theorem relies on 14 hypotheses to reach appropriate solutions. This restriction, makes open this question that "at least how many hypotheses are necessarily needed to reach desired number of solutions?"