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Bifurcation properties for a class of fractional Laplacian equations in $\mathbb{R}^N$

Claudianor O. Alves *

In this conference we will talk about the existence of solution for the following class of nonlocal problems

$$\begin{cases} (-\Delta)^s u = \lambda f(x)(u + h(u)), \text{ in } \mathbb{R}^N, \\ u(x) > 0, \quad \forall x \in \mathbb{R}^N, \\ \lim_{|x|\to\infty} u(x) = 0, \end{cases} \tag{P}$$

where $N > 2s$, $s \in (0,1)$, $\lambda > 0$, $f : \mathbb{R}^N \to \mathbb{R}$ is a positive continuous function, $h : \mathbb{R} \to \mathbb{R}$ is a bounded continuous function and $(-\Delta)^s u$ is the fractional Laplacian. The main tools used are Leray-Shauder degree theory and Global Bifurcation result due to Rabinowitz.

Joint work with Romildo N. de Lima (UFCG) and Alânnio B. Nóbrega (UFCG).

*Unidade Acadêmica de Matemática, Universidade Federal de Campina Grande, email: coalves@mat.ufcg.edu.br