Seminário de Análise

Infinitely many small solutions for a sublinear fractional Kirchhoff-Schrödinger-Poisson systems

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IME - UFG

Abstract. In this talk we study the following class of Kirchhoff-Schrödinger-Poisson systems

$$\begin{cases} m([u]_\alpha^2)(-\Delta)^\alpha u + V(x)u + k(x)\phi u = f(x,u), & x \in \mathbb{R}^3, \\ (-\Delta)^\beta \phi = k(x)u^2, & x \in \mathbb{R}^3, \end{cases}$$

where $[\cdot]_\alpha$ denotes the Gagliardo semi-norm, $(-\Delta)^\alpha$ denotes the fractional Laplacian operator with $\alpha, \beta \in (0,1]$, $4\alpha + 2\beta \geq 3$ and $m : [0,+\infty) \to [0,+\infty)$ is a Kirchhoff function satisfying suitable assumptions. The functions $V(x)$ and $k(x)$ are nonnegative and the nonlinear term $f(x,s)$ satisfies certain local conditions. By using a variational approach, we use a Kajikiya's version of the symmetric mountain pass lemma and Moser iteration method to prove the existence of infinitely many small solutions. This is a joint work with Rodrigo Clemente - UFRPE and Diego Ferraz - UFRN.

References

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