

Classification of stable solutions to the fractional Lane-Emden system

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Abstract

In this talk, we will prove the nonexistence of stable positive solutions to the fractional Lane-Emden system

$$\begin{cases} (-\Delta)^s u = v^p & \text{in } \mathbb{R}^N \\ (-\Delta)^s v = u^q & \text{in } \mathbb{R}^N \end{cases}$$

in the subcritical cases with $0 < s < 1$ and $p, q > 1$. This is, in particular, the first nonexistence result of stable positive solutions for the fractional Lane-Emden system in literature which extends the result in [Cowan, *C, Nonlinearity* 26 (2013), no. 8, 2357–2371.] from the local case to the nonlocal one. This is a joint work with V.H.Nguyen.