Nonexistence of nontrivial solutions to Dirichlet problems for the fractional Laplacian.

J. Carmona*

We prove nonexistence of nontrivial bounded solutions for the problem

$$\begin{cases} (-\Delta)^s u = f(u) & \text{in } \Omega, \\ u = 0 & \text{in } \mathbb{R}^N \setminus \Omega. \end{cases} \tag{P}$$

where $f : \mathbb{R} \to \mathbb{R}$ is a locally Lipschitz function with $F(t) = \displaystyle\int_0^t f(\tau)d\tau \leq 0$ and $\Omega \subset \mathbb{R}^N$ ($N \geq 1$) is a bounded domain with $\mathcal{C}^{1,1}$ boundary regularity.

References

[1] J. Carmona and A. Molino, *Nonexistence of nontrivial solutions to Dirichlet problems for the fractional Laplacian.* Electron. J. Differential Equations (2023), Paper No. 16, 10 pp.

*Departamento de Matemáticas, Universidad de Almería, Ctra. Sacramento s/n, La Cañada de San Urbano, 04120 - Almería, Spain. Email: jcarmona@ual.es