

POHOZAEV IDENTITY FOR A BOUNDED AND OPEN SET ON \mathbb{R}^N

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In this talk we shall prove that the problem

$$\begin{cases} -\Delta u = |u|^{2^*-2} & \text{in } \Omega \\ u = 0 & \text{on } \partial\Omega \end{cases},$$

has no nontrivial solutions under suitable assumptions on Ω . For example when Ω in R^N is a ball or any convex domain. In order to prove the nonexistence result we consider some identities together with the Pohozaev identity for classical solutions. The same can be done for supercritical nonlinearities.

References

- [1] Marino Badiale, Enrico Serra, *Semilinear Elliptic Problem for Beginners*, Springer, 2011.