A NOTE ON NONEXISTENCE OF RADIAL SOLUTIONS TO SEMILINEAR ELLIPTIC INEQUALITIES

Mohammed Guedda

Abstract
We study the nonexistence result of radial solutions to $-\Delta u + c \frac{u}{|x|^2} + |x|^{\sigma}|u|^q u \leq 0$ posed in $B$ or in $B \setminus \{0\}$ where $B$ is the unit ball centered at the origin in $\mathbb{R}^N$, $N \geq 3$. Moreover, we give a complete classification of radial solutions to the problem $-\Delta u + c \frac{u}{|x|^2} + |x|^{\sigma}|u|^q u = 0$. In particular we prove that the latter has exactly one family of radial solutions.

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Key words. Radial solution, existence, blow up, classification, elliptic inequality.