

1139-34-158

K.D. Chu, D.D. Hai and Ratnasingham Shivaji* (r_shivaj@uncg.edu). *Uniqueness of positive radial solutions for infinite semipositone p -Laplacian problems in exterior domains.*

We prove uniqueness and asymptotic behavior of positive radial solutions to the p -Laplacian problem

$$\begin{cases} -\Delta_p u = \lambda K(|x|)f(u) \text{ in } |x| > r_0, \\ u = 0 \text{ on } |x| = r_0, \quad u(x) \rightarrow 0 \text{ as } |x| \rightarrow \infty. \end{cases}$$

where $\Omega = \{x \in \mathbb{R}^N : |x| > r_0 > 0\}$, $N > 2$, $f : (0, \infty) \rightarrow \mathbb{R}$ is continuous, $f(u) \sim u^q$ at ∞ for some $q \in [0, p - 1)$ with possible infinite semipositone structure at 0, and λ is a large parameter (Received February 07, 2018)