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Uniqueness of positive radial solutions for a class of infinite semipositone p -Laplacian problems in a ball.

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

$$\begin{cases} -\Delta_p u = \lambda f(u) \text{ in } \Omega, \\ u = 0 \text{ on } \partial\Omega, \end{cases}$$

where $\Delta_p u = \operatorname{div}(|\nabla u|^{p-2} \nabla u)$, $p \geq 2$, Ω is the open unit ball in R^N , $N > 1$, $f : (0, \infty) \rightarrow \mathbb{R}$ is concave, p – sublinear at ∞ with infinite semipositone structure at 0, and λ is a large parameter. (Received July 31, 2020)