A BRÉZIS-OSWALD PROBLEM TO $\Phi-$LAPLACIAN OPERATOR WITH A GRADIENT AND SINGULAR TERM

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It is establish existence of solution to the quasilinear elliptic problem

$$\begin{cases} -\Delta_\Phi u = \lambda f(x,u) + \mu|\nabla u|^\sigma \text{ in } \Omega, \\ u > 0 \text{ in } \Omega,\ u = 0 \text{ on } \partial\Omega, \end{cases}$$

where f has a sublinear growth, $\sigma > 0$ is an appropriate power, $\lambda > 0$, and $\mu \geq 0$ are real parameters. Our results are an improvement of the classical Brézis-Oswald result to Orlicz-Sobolev setting by including singular nonlinearity as well as a gradient term.

References

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