A pseudo–index approach to fractional equations

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We study the multiplicity of weak solutions of the quasilinear elliptic problem

$$\begin{cases} -\Delta_p u \;=\; g(x,u) & \text{in } \Omega \\ u = 0 & \text{on } \partial\Omega \end{cases}$$

where $1 < p < +\infty$, $\Delta_p u = \operatorname{div}(|\nabla u|^{p-2}\nabla u)$, Ω is an open bounded domain of $\mathbf{R}^N$ with smooth boundary $\partial\Omega$ and g behaves as $|u|^{p-2}u$ at infinity. Both the non–resonant and the resonant case are analyzed. Furthermore, we consider an analogous problem for the fractional p–Laplacian and on $\mathbf{R}^N$.

References

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