GLOBAL BIFURCATION FOR NEUMANN PROBLEMS INVOLVING NONHOMOGENEOUS OPERATORS

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Dedicated to Wataru Takahashi on the occasion of his retirement

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Abstract. We consider a Neumann problem involving nonhomogeneous operators
\[-\text{div}(\Psi(x, \nabla u)) + \Phi(x, u) = \mu |u|^{p-2} u + f(\lambda, x, u, \nabla u) \text{ in } \Omega\]
when \(\Psi, \Phi,\) and \(f\) satisfy certain conditions and \(\mu\) is not an eigenvalue in some sense. The aim of this paper is to study the structure of the set of solutions for the above equation, by applying a bifurcation result for nonlinear equations and a nonlinear spectral theory for homogeneous operators.

Key Words and Phrases: Bifurcation, Neumann problem, nonhomogeneous operators, \(p\)-Laplacian.

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311


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