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Section:

10. Partial Differential Equations

1991 MS Classification: 35K
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Positive solutions of nonlinear Neumann problems. Application of the global fibering method

We consider the problems with nonlinear Neumann boundary conditions for nonlinear elliptic equations with nonlinear principal parts, in particular for the p-Laplacian. We obtain the unimprovable conditions for the existence of positive solutions. The proof is based on the fibering method for nonlinear variational problems. Part of these results is joint work with A. Tesei.
Reference: S. Pohozaev, The fibering method in nonlinear variational problems, Pitman Research Notes in Mathematics, v.365 (1997), 35-88. S. Pohozaev, On the global fibering method in nonlinear variational problems, Proc. Steklov Math. Institute, v.219 (1997), 286-334. S. Pohozaev, A. Tesei, Existence and nonexistence of solutions of nonlinear Neumann problems (to appear).