

**Granas, A.; Guenther, R. B.; Lee, J. W.**

**Topological transversality. II: Applications to the Neumann problem for  $y'' = f(t, y, y')$ .**

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Pac. J. Math. 104, 95-109 (1983).

[For part I see *ibid.* 89, 53-67 (1980; [Zbl 0453.34018](#)).]

In this paper the Neumann problem for the nonlinear equation  $y'' = f(t, y, y')$  is studied. A priori bounds are derived and the results of Granas, Guenther and Lee, are invoked to obtain existence theorems. The existence theorems are in many cases quite different from those of the Dirichlet problem, e.g. it is possible to obtain general existence theorems where  $f(t, y, y')$  can grow very rapidly in the  $y'$  variable.

**MSC:**

[34A12](#) Initial value problems, existence, uniqueness, continuous dependence and continuation of solutions to ordinary differential equations

Cited in **12** Documents

[34A34](#) Nonlinear ordinary differential equations and systems

**Keywords:**

Neumann problem; A priori bounds; Dirichlet problem

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