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## A NONLINEAR BOUNDARY VALUE PROBLEM

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**1. Introduction.** The main result of this paper establishes the existence of solutions of certain nonlinear two point boundary value problems for a class of nonlinear second order differential equations.

A corollary to the main theorem includes a boundary value problem recently considered by Herbert B. Keller [1] and Klaus Schmitt [2].

**2. Definitions.** In the following definitions let  $S$  stand for a point set in the  $YZ$ -plane.

$$\begin{aligned}
 A &= \{S: S \text{ is an arc}\}, \\
 H_1 &= \{S: (Y_1, Z_1), (Y_2, Z_2) \in S \Rightarrow (Y_1 - Y_2)(Z_1 - Z_2) \geq 0\}, \\
 H_2 &= \{S: (Y_1, Z_1), (Y_2, Z_2) \in S \Rightarrow (Y_1 - Y_2)(Z_1 - Z_2) \leq 0\}, \\
 J_1 &= \{S: \forall (Y, Z) \in S \exists Z = N\}, \\
 J_2 &= \{S: \forall (Y, Z) \in S \exists Y - Z = N\}, \\
 R &= \{(X, Y, Z): X_1 \leq X \leq X_2, |Y| + |Z| < \infty\}, \\
 B_0 &= \{f(X, Y, Z): f \text{ is continuous in } R\},
 \end{aligned}$$