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James Robert Ward* (jrw87@math.uab.edu), Department of Mathematics, University of Alabama at Birmingham, Birmingham, AL 35294. *A nonresonance condition for boundary value problems.*

A short history of nonresonance conditions for nonlinear boundary value problems for second order ordinary differential equations will be presented. This will be followed by the presentation of a new nonresonance condition, as follows: Consider the boundary value problem

$$\begin{aligned}u'' + g(u)u &= h(t, u, u') \\ u(0) &= 0, \quad u(\pi) = 0\end{aligned}$$

with g continuous, periodic, and positive and h continuous and bounded. There is a solution if the mean value of g is not the square of an integer. (Received September 01, 2008)