

1067-35-388

Alfonso Castro* (castro@math.hmc.edu), Department of Mathematics, Harvey Mudd College, Claremont, CA 91711. *Semilinear wave equations with non-monotone nonlinearity.*

Recent results of the solvability of $u_{tt} - u_{xx} + g(u) = p(x, t)$, $u(t + 2\pi, x) = u(t, x)$, $u(t, 0) = u(t, \pi)$ for g asymptotically linear and non-monotone will be discussed. The main interest in this problem is the fact that 0 is an eigenvalue of infinite multiplicity which is included in the range of the derivative of g . In contrast with semilinear elliptic boundary value problems, we will show cases where the problem is not at resonance, g and p are smooth and yet the problem has no continuous solution. (Received August 31, 2010)