

1014-34-1082

John V Baxley and **Kristen Elizabeth Kobylus*** (kobyke4@wfu.edu), 301 North Deerfield Circle, Salisbury, NC 28147. *Nonlinear Second Order Boundary Value Problems with Multiple Solutions*. Preliminary report.

Conditions on the nonlinear function $f(y)$ which guarantee the existence of multiple positive solutions of the boundary value problem $y'' + f(y) = 0$, $0 \leq t \leq 1$, $y(0) = 0$, $y(1) = 0$ are well-known [J. Henderson and H.B. Thompson, Proc. Amer. Math. Soc. 128 (2000), 2373-2379]. With an eye toward singular problems, we extend this result to allow $f(y)$ to be large near $y = 0$. (Received September 27, 2005)