



# The Boundedness of Solutions to Nonlinear Third Order Differential Equations

C. Tunç\*

*Department of Mathematics, Faculty of Arts and Sciences, Yüzüncü Yıl University,  
65080, Van, Turkey*

Received: May 18, 2009; Revised: January 9, 2010

**Abstract:** In this paper, we establish some new sufficient conditions under which all solutions of nonlinear third order differential equations of the form

$$x''' + \psi(x, x')x'' + f(x, x') = p(t, x, x', x'')$$

are bounded. For illustrations, an example is also given on the bounded solutions.

**Keywords:** *nonlinear differential equations; third order; boundedness of solutions; Lyapunov's second method.*

**Mathematics Subject Classification (2000):** 34D20.