

ON THE STABILITY AND BOUNDEDNESS OF DIFFERENTIAL
EQUATIONS OF THIRD ORDER WITH RETARDED ARGUMENT

Cemil Tunç¹, Sizar Abid Mohammed²

¹*Yüzüncü Yıl University, Van, Turkey*

²*University of Duhok, Duhok, Iraq*

Abstract

In this paper, we study the stability, boundedness and ultimately boundedness of solutions of the following t vector functional differential equations of third order with retarded argument, $\tau_1 > 0$:

$$X''' + \Psi(X')X'' + G(X') + cX(t - \tau_1) = P(t, X, X', X'').$$

By using the Liapunov-Krasovskii functional approach, new stability, boundedness and ultimately boundedness criteria are obtained for the considered functional differential equation. The obtained results extend and improve some recent results in the literature.

Keywords: Stability and boundedness, retarded argument, Liapunov-Krasovskii functional approach.

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¹First Author's e-mail: cemtunc@yahoo.com

²Second Author's e-mail: sizar@uod.ac