On a new Vallée Poussin type inequality for linear differential equations under impulse effect

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Abstract

In this talk, we will deal with the derivation of a Vallée Poussin inequality for linear impulsive differential equations of general type.

The classical Vallée Poussin inequality dates back to 1929 [1], but it took a long time to appear the generalizations of the inequality. Its improvements in various directions have been obtained by some authors, see for instance [2-5]. Still, to the best of our knowledge, any generalization for differential equations under impulse effect has not appeared in the literature. Motivated by the reasons mentioned above we studied a general type of linear impulsive differential equations to obtain a Vallée Poussin inequality. When the impulse effects dropped our results reduce to the classical Vallée Poussin inequality given in [1], and also to its improvements obtained by Hartman and Wintner in [2].

Key Words: Vallée Poussin inequality, Impulsive differential equation, Green's function.

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