

Stability and Boundedness Theorems of Solutions of Certain Systems of Differential Equations

Authors : Adetunji A. Adeyanju., Mathew O. Omeike, Johnson O. Adeniran, Biodun S. Badmus

Abstract : In this paper, we discuss certain conditions for uniform asymptotic stability and uniform ultimate boundedness of solutions to some systems of Aizermann-type of differential equations by means of second method of Lyapunov. In achieving our goal, some Lyapunov functions are constructed to serve as basic tools. The stability results in this paper, extend some stability results for some Aizermann-type of differential equations found in literature. Also, we prove some results on uniform boundedness and uniform ultimate boundedness of solutions of systems of equations study.

Keywords : Aizermann, boundedness, first order, Lyapunov function, stability

Conference Title : ICODEDS 2024 : International Conference on Ordinary Differential Equations and Dynamical Systems

Conference Location : Paris, France

Conference Dates : March 25-26, 2024