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Lyapunov-type Inequalities for Certain Nonlinear Systems on Time Scales

Mehmet ÜNAL

Department of Mathematics and Computer Science,

Bahçeşehir University,

34100 Beşiktaş, İstanbul-TURKEY

e-mail: munal@bahcesehir.edu.tr [.5ex]

Devrim ÇAKMAK

Department of Mathematics Education,

Faculty of Education,

Gazi University, 06500

Teknikokullar, Ankara-TURKEY

e-mail: dcakmak@gazi.edu.tr

 [Keywords](#)
 [Authors](#)



math@tubitak.gov.tr

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Abstract: In this study, we prove Lyapunov-type inequalities for certain nonlinear systems on an arbitrary time scale T by using elementary time scale calculus. These inequalities enable us to obtain a criterion of disconjugacy for such systems. Special cases of our results contain the classical Lyapunov inequality for both differential and difference equations.

Key Words: Nonlinear systems; Hamiltonian systems; Lyapunov - type inequality; Disconjugacy; Generalized zero; Time Scale

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