

Eighth Mississippi State - UAB Conference on Differential Equations Computational Simulations, May 7–9, 2009, Department of Mathematics and Statistics, Mississippi State University, Mississippi State, MS, USA

## LIAPUNOV TYPE INEQUALITY ON TIME SCALES

PANIGRAHI SAROJ

The theory of Time scales, which has recently received a lot of attention, was introduced by Stefan Hilger in his Ph. D thesis in 1988 in order to unify continuous and discrete analysis. Many results concerning differential equations carry over quite easily to corresponding results for difference equations, while other results seems completely different in nature for their counterparts. The study of the dynamic equation on time scales reveals such discrepancies, and helps avoid proving results twice, once for differential equations and once for difference equations. The general idea to prove a result for dynamic equation where the domain of the unknown function is so-called time scale, which is an arbitrary closed subset of the reals. Liapunov inequalities have proved to be very useful in oscillation theory, disconjugacy, eigenvalue problems, and numerous other applications of differential and difference equations. In this talk, we will discuss several versions of Liapunov inequalities on time scales for third order dynamic for equations.

DEPARTMENT OF MATHEMATICS AND STATISTICS, UNIVERSITY OF HYDERABAD, HYDERABAD-500 046, INDIA

*E-mail address:* `spsm@uohyd.ernet.in`