

REDUCTION PRINCIPLE IN THE THEORY OF STABILITY FOR DYNAMIC SYSTEMS ON TIME SCALE

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We consider the dynamic system in a Banach space on unbounded above time scale:

$$\begin{cases} x^\Delta &= A(t)x + f(t, x, y), \\ y^\Delta &= B(t)y + g(t, x, y). \end{cases} \quad (1)$$

This system satisfies the conditions of integral separation with the separation constant ν ; the integral contraction with the integral contraction constant μ , nonlinear terms are ε -Lipshitz, and the system has a trivial solution.

We prove the theorem of asymptotic phase. Using this result and the centre manifold theorem we reduce the investigation of stability of the trivial solution of (1) to investigation of stability of the reduced dynamic system

$$z^\Delta = A(t)z + f(t, z, u(t, z)). \quad (2)$$

REFERENCES

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