

CONSTRUCTION OF SOLUTIONS OF LINEAR HYBRID SYSTEMS

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The hybrid dynamic systems, consisting of linear stationary differential and functional subsystems

$$\dot{x}(t) = Ax(t) + By(t), \quad (1)$$

$$y(t) = Cx([t]) + Dy(t-1). \quad (2)$$

are investigated. Here A , B , C and D are square $n \times n$ matrices with constant coefficients, $x \in R^n$, $y \in R^n$, $t \geq 0$, $[\cdot]$ is the function of the whole part of a number.

The solution of Cauchy problem for the system (1), (2) is obtained and will be presented.

References

1. Branicky M. S. Stability of Switched and Hybrid Systems. In: Proc. 3-rd IEEE CDC, 1994, pp. 3498-3503.
2. Krasovsky N.N. Some tasks of theory of motion stability. Moskow, Fizmatgiz, 1959, 212 pp. [In Russian]