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Controllability of the linear switched dynamical systems of the special type. (English)

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Summary: In this paper, the controllability of a special type of linear switched systems is studied. Switch is carried out between two 2×2 matrices with purely imaginary eigenvalues. Such a system describes oscillations of a spring pendulum with a switchable stiffness coefficient. The main result of the work is an algorithm that allows finding a set of switching signals for switching from point to point, and a theorem for switching systems with a block-diagonal matrix.

MSC:

93B05 Controllability

93C30 Control/observation systems governed by functional relations other than differential equations (such as hybrid and switching systems)

93C05 Linear systems in control theory

Cited in 1 Document

Keywords:

linear switched systems; controllability; switching way; getting to given point; spring pendulum

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