Stable regimes and toruses of one class of impulsive systems

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Let us consider a chain of 3 connected, singularly perturbed oscillators with a delay:

(1)

where , and smooth functions have entry conditions: , and , . There are researched 3 types of system (1) for different values of and conditions on , : a) , ; b) ; c) . In article [1] there was proved, when is sufficiently great, system (1) can be transformed to impulsive two-dimensional system without small parameters. Also for map

(2)

there was proved that exponentially stable points of map (2) are satisfied the orbitally, asymptotically stable cycles of system (1). In map (2) functions , have entry conditions . These functions are connected with initial variables by means of approximate equalities . is the first approximation of stable cycle of single oscillator of system (1).

The research of map (2) was implemented by means of special software, which used parallel independent streams on CPU. There are researched questions of existence and stability of periodic solutions depending on different values of initial parameters. Also the special attention is paid to the number of coexisting stable regimes. Some results of research were published in article [2].

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**References**

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