**STABLE REGIMES OF DYNAMIC SYSTEMS WITH IMPULIVE INFLUENCES**

**Leonid Ivanovsky**

*P.G. Demidov Yaroslavl State University*

*P.G. Demidov YarSU*

Leonid Ivanovsky – postgraduate student of the Faculty of Computer Science of P.G. Demidov Yaroslavl State University, laboratory researcher at Scientific Center in Chernogolovka RAS.

[leon19unknown@gmail.com](mailto:leon19unknown@gmail.com)

Let us consider a chain of three connected and singularly perturbed oscillators with a delay:

(1)

where , and smooth functions have entry conditions: , and , . There are researched three types of system (1) for different values of parameters and conditions on , : a) ; b) , ; c) . In articles [1,2] there were proved, that in any cases, when is sufficiently great, singulary perturbed system (1) can be transformed to impulsive two-dimensional system without small parameters. Also there was proved, that exponentially stable points of map

(2)

are satisfied the orbitally, asymptotically stable cycles of system (1). In map (2) functions and 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 mapping (3) was carried out by means of special software. The calculation of coordinates of stable points are performed on a large number of parallel independent streams by means of computation of trajectories. Results are shown in phase space of map (2). There are researched questions of existence and stability of relaxational 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 for certain values of initial parameters were published in article [3].

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