TRUDY INSTITUTA MATEMATIKI I MEKHANIKI UrO RAN

Vol. 23 No. 1 **2017**

DOI: 10.21538/0134-4889-2017-23-1-228-240

MSC: 37N35, 65J15, 47J25, 52A01, 91A25

TRANSFINITE SEQUENCES IN THE METHOD OF PROGRAMMED ITERATIONS

Received October 31, 2016

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We consider the problem of retaining the motions of an abstract dynamic system in a given constraint set. Constructions from the method of programmed iterations are extended to problems whose dynamics, in general, does not possess any topological properties. The weaker requirements are compensated by introducing transfinite iterations of the programmed absorption operator. The technique of fixed points of mappings in inductive partially ordered sets is used in the proofs. The proposed procedure produces the set where the problem under consideration is successfully solved in the class of quasistrategies. The control interval is not assumed to be finite.

Keywords: method of programmed iterations, transfinite iterations, quasistrategies, fixed points, inductive posets.

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Cite this article as:
D. A. Serkov, Transfinite sequences in the method of programmed iterations, *Trudy Inst. Mat. Mekh. UrO RAN*, 2017, vol. 23, no. 1, pp. 228–240 .