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## Discrete Dynamical Systems Defined Geometrical Images of Automata

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The object of study is the dynamic system defined by geometrical images of automata. The phase space of the system is determined by orthogonal and affine transformations of geometric images. Compositions of dynamical systems of a given type and their characteristics are studied.

*Key words:* automata, discrete dynamical systems, geometric images of automata.

### References

1. Tyapaev L. B. The geometric model of the behavior of automata and their indistinguishability. *Matematika, Mekhanika, Matematicheskaya kibernetika: Sb. naych. tr.* Saratov, Saratov Univ. Press, 1999, pp. 139–143 (in Russian).
2. Tyapaev L. B. Solving Some Problems of Automata Behaviour Analysis. *Izv. Sarat. Univ. N.S. Ser. Math. Mech. Inform.*, 2006, vol. 6, no. 1/2, pp. 121–133 (in Russian).
3. Tyapaev L. B. Geometric images of automata and dynamical systems. *Discretnaya matematika i eyo prilozheniya. Materialy X Mezhd. seminara.* Ed. O. M. Kasim-Zade. Moscow, 2010, pp. 510–513 (in Russian).
4. Matov D. O. Affine transformations of geometric images of finite automata. *Problemy teoreticheskoy kibernetiki : Materialy XVI Mezhdunar. konf.* Ed. Yu. I. Zhuravlyova. Nizhni Novgorod, 2011, pp. 303–306 (in Russian).