

On Waterman's lattices

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By finite lattice L can be determined ordinary graph $\langle L, \sim \rangle$, where $a \sim b$ means that a covers b or b covers a in the lattice L . Obviously, $\text{Aut}\langle L, \sim \rangle \supseteq \text{Aut}\langle L, \succ \rangle$. In the monograph of G. Birkhoff [1] posed the problem №6: "Determine all finite lattices in which every graph-automorphism is a lattice-automorphism" (A. G. Waterman). We call such finite lattices is Waterman's lattices.

In [2] proved a theorem that every finite lattice is embeddable into the Waterman's lattice.

We prove the following

Theorem. *Any finite lattice is a homomorphic image of a Waterman's lattice.*

These theorems indicate on the universalism and complexity of the Waterman's lattice class.

References

- [1] G. Birkhoff, Lattice theory. American Mathematical Society, 1967.
- [2] E. A. Perminov, On Diagram lattices // Sverdlovsk: USU, 340–89 deposited, 1984. P. 1–9.