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Crossed homomorphisms of finite algebras with a scheme of binary operators. (English. Russian original) [Zbl 0974.08005](#)

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According to V. D. Belousov, a quasigroup $Q(*)$ is called right crossed isotopic to a quasigroup $Q(\cdot)$ if

$$x * y = \gamma^{-1}(\alpha x \cdot B(x, y))$$

for some permutations $\alpha, \gamma : Q \rightarrow Q$ and some right reversible operation B on a set Q . A left crossed isotopy is defined in an analogous way.

In this paper, a notion of right (left) crossed homomorphism for finite algebras with binary operations is introduced. A crossed homomorphism theorem (an analogue of the ordinary homomorphism theorem) is proved. Crossed congruences of quasigroups that are isotopic to groups and crossed isotopic to groups are studied. The possibility of applying crossed congruences to constructing algorithms for solving equations over algebras is shown.

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[08A62](#) Finitary algebras

[20N05](#) Loops, quasigroups

[08A70](#) Applications of universal algebra in computer science

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