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Quasigroups isotopic to IP-loops

Let $Q=\{1,2,\dots,n\}$ and $Q(\cdot)$ quasigroup on it.

Definition 1. We will call permutation φ_i track of element $i\in Q$ when

$$x\cdot\varphi_i(x)=i$$

The notions of IP-loop was introduced by Bruck R.H. [1].

Definition 2. We will call $Q(\cdot)$ IP-loop when

$$(y\cdot x)\cdot x^{-1}=y=x^{-1}\cdot(x\cdot y)$$

Theorem. If loop $Q(\cdot)$ is isotopic to any IP-loop, then for all i we can find an element j that

$$\varphi_1\varphi_i^{-1}\varphi_1=\varphi_j$$

where $1\cdot x=x\cdot 1=x,\ x\in Q$.

[1] R.H.Bruck. Some results in the theory of quasigroups. –Trans. Amer. Math. Soc., 1944, 55, 19-52.