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On multiplication groups of left conjugacy closed loops

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Abstract: A loop Q is said to be left conjugacy closed (LCC) if the set $\{L_x; x \in Q\}$ is closed under conjugation. Let Q be such a loop, let \mathcal{L} and \mathcal{R} be the left and right multiplication groups of Q , respectively, and let $\text{Inn}Q$ be its inner mapping group. Then there exists a homomorphism $\mathcal{L} \rightarrow \text{Inn}Q$ determined by $L_x \mapsto R_x^{-1}L_x$, and the orbits of $[\mathcal{L}, \mathcal{R}]$ coincide with the cosets of $A(Q)$, the associator subloop of Q . All LCC loops of prime order are abelian groups.

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