

The multiplication groups of 2-dimensional topological loops

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If the multiplication group $Mult(L)$ of a connected 2-dimensional topological loop L is a Lie group, then $Mult(L)$ is an elementary filiform Lie group $\mathcal{F}$ of dimension $n + 2$, $n \geq 2$, and any such group is the multiplication group of a connected 2-dimensional topological loop L . Moreover, if the group topologically generated by the left translations of L has dimension 3, then L is uniquely determined by a real polynomial of degree n .