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The κ -word problem over local groups

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A κ -term is a formal expression obtained from letters of an alphabet using two operations: the binary concatenation and the unary $(\omega-1)$ -power. A κ -term has a natural interpretation on each finite semigroup S : the concatenation is viewed as the semigroup multiplication while $(\omega-1)$ -power is interpreted as the unary operation which sends each element s of S to the inverse of ss^ω in the maximal subgroup containing its unique idempotent power s^ω . The κ -word problem for a pseudovariety \mathbf{V} of semigroups consists in deciding whether two κ -terms have the same interpretation over every semigroup of \mathbf{V} . We will talk about the κ -word problem for the pseudovariety \mathbf{LG} , of local groups, consisting of all finite semigroups S such that eSe is a group for all idempotents e of S .

(joint work with Conceição Nogueira and Lurdes Teixeira)