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Abstracts of Short Communications and Posters

Section:

2. Algebra

1991 MS Classification: 20
Schein, Boris M., University of Arkansas, USA
A new construction for free inverse semigroups
Various constructions for free inverse semigroups were suggested by H. E. Scheiblich, W. D. Munn and the speaker. We offer a new construction. Each element of a free inverse semigroup $\mathbf{FI}_X$ with a set X of free generators is a class of equivalent words. We describe a new version of canonical words for each of these classes and produce an algorithm reducing each word to its canonical form. Our canonical words are the shortest words in each of the classes and the equality of the canonical words is easily decidable. All previous constructions of $\mathbf{FI}_X$ follow from ours in a rather obvious way, but the converse is not obvious. This research has been done in collaboration with Olga V. Poliakova.
Reference: H. E. Scheiblich, Free inverse semigroups, *Semigroup Forum* **4** (1972), 351–359. W. D. Munn, Free inverse semigroups, *Proc. London Math. Soc.* **(3) 29** (1974), 385–404. Boris M. Schein, Free inverse semigroups are not finitely presentable, *Acta Math. Sci. Hungar.* **26** (1975), 41–52,