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Brauer and Jones tied monoids. (English) [Zbl 07567652]

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Summary: We introduce a ramified monoid, attached to each Brauer-type monoid, that is, to the symmetric group, to the Jones and Brauer monoids among others. Ramified monoids correspond to a class of tied monoids arising from knot theory and are interesting in themselves. The ramified monoid attached to the symmetric group is the Coxeter-like version of the so-called tied braid monoid. We give a presentation of the ramified monoid attached to the Brauer monoid. Also, we introduce and study two tied-like monoids that cannot be described as ramified monoids. However, these monoids can also be regarded as tied versions of the Jones and Brauer monoids.

MSC:

20M05 Free semigroups, generators and relations, word problems
20M20 Semigroups of transformations, relations, partitions, etc.
05B10 Combinatorial aspects of difference sets (number-theoretic, group-theoretic, etc.)
05A19 Combinatorial identities, bijective combinatorics
03E05 Other combinatorial set theory

Keywords:
Brauer monoid; Jones monoid; tied monoids; ramified monoids; set partitions

Full Text: DOI

References:

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