

ALL MAXIMAL IDEMPOTENT SUBMONOIDS OF  
GENERALIZED COHYPERSUBSTITUTIONS  
OF TYPE  $\tau = (2)$

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**Abstract**

A generalized cohypersubstitution of type  $\tau$  is a mapping  $\sigma$  which maps every  $n_i$ -ary cooperation symbol  $f_i$  to the cotermin  $\sigma(f)$  of type  $\tau = (n_i)_{i \in I}$ . Denote by  $Cohyp_G(\tau)$  the set of all generalized cohypersubstitutions of type  $\tau$ . Define the binary operation  $\circ_{CG}$  on  $Cohyp_G(\tau)$  by  $\sigma_1 \circ_{CG} \sigma_2 := \hat{\sigma}_1 \circ \sigma_2$  for all  $\sigma_1, \sigma_2 \in Cohyp_G(\tau)$  and  $\sigma_{id}(f_i) := f_i$  for all  $i \in I$ . Then  $\underline{Cohyp_G(\tau)} := \{Cohyp_G(\tau), \circ_{CG}, \sigma_{id}\}$  is a monoid. In [5], the monoid  $\underline{Cohyp_G(2)}$  was studied. They characterized and presented the idempotent and regular elements of this monoid. In this present paper, we consider the set of all idempotent elements of the monoid  $\underline{Cohyp_G(2)}$  and determine all maximal idempotent submonoids of this monoid.

**Keywords:** generalized cohypersubstitutions, idempotent submonoids, maximal submonoids.

**2010 Mathematics Subject Classification:** 20B10, 20M05, 20M10.

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Received 4 December 2019

Revised 6 May 2020

Accepted 6 May 2020