

## Order relation on the solutions sets of $Z$ -conditional Cauchy equations on groups

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ABSTRACT. For a fixed pair of groups  $(G, \circ)$  and  $(H, *)$  and for all sets  $Z \subset G \times G$  we consider the  $Z$ -conditional Cauchy equations

$$C_Z : f : G \longrightarrow H, f(x \circ y) = f(x) * f(y), (x, y) \in Z.$$

We prove that the family of the sets of solutions  $\{S(C_Z) | Z \subset G \times G\}$  is a closure-system. This system is not a sublattice of  $(\mathcal{P}(H^G), \subset)$  and generally it is not algebraic closure-system.

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