

The class of groups is globally closed

Salvatore Tringali

School of Mathematical Sciences, Hebei Normal University / Shijiazhuang, Hebei province, 050024 China
salvo.tringali@gmail.com

The non-empty subsets of a (multiplicatively written) semigroup S form themselves a semigroup, hereinafter denoted by $\mathcal{P}(S)$, when endowed with the binary operation of setwise multiplication

$$(X, Y) \mapsto XY := \{xy : x \in X, y \in Y\}.$$

Accordingly, a semigroup H is **globally isomorphic** to a semigroup K if $\mathcal{P}(H)$ is isomorphic (in the usual sense of semigroups) to $\mathcal{P}(K)$; and a class \mathcal{C} of semigroups is **globally closed** if, whenever a semigroup $H \in \mathcal{C}$ is globally isomorphic to a semigroup K , then $K \in \mathcal{C}$.

We will demonstrate that the class of groups is globally closed and, time permitting, discuss a couple of related questions.

References

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