

INTERACTIONS BETWEEN GROUPS AND SEMIGROUPS

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Resumo: In semigroup theory one of the major goals is certainly to see how the group of units shapes the structure of the semigroup. This topic has been attracting the attention of many mathematicians such as J. Araújo, W. Bentz, P. Cameron, J. Fountain, A. Garrão, I. Levi, D. McAlister, R. McFadden, P. Medeiros, J. Mitchell, M. Neuhoffer, P. Neumann, J. Saxl, C. Schneider, B. Steinberg, and many others. The general goal is to classify the pairs (a, G) , where a is a non-invertible transformation and G is a group of permutations, such that the semigroup $\langle G, a \rangle$ has a given property P , for example is regular or idempotent generated.

Let (a, G) be a pair as above. We say that (a, G) is an S_n -pair if

$$\langle G, a \rangle \setminus G = \langle S_n, a \rangle \setminus S_n.$$

The importance of classifying the S_n -pairs comes from the fact that almost everything is known about the semigroups $\langle S_n, a \rangle \setminus S_n$. Therefore, the classification of the S_n -pairs gives for free, so to speak, almost everything about the semigroup $\langle G, a \rangle$. In this talk we are going to give a characterization of the S_n -pairs and show how that was used to find an interesting new class of permutation groups.

This is a joint work with João Araújo and Peter J. Cameron.

Referências

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