عنوان مقاله:

Semigroups with inverse skeletons and Zappa-Sz\acute{\rm e}p products

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خلاصه مقاله:

The aim of this paper is to study semigroups possessing E-regular elements, where an element a of a semigroup S is {em E-regular} if a has an inverse a^\circ such that aa^\circ,a^\circ a lie in E\subseteq E(S). Where S possesses `enough' (in a precisely defined way) E-regular elements, analogues of Green's lemmas and even of Green's theorem hold, where Green's relations {\mathcal R},{\mathcal L},{\mathcal H} and \mathcal D are replaced by \widetilde{{\mathcal R}}_E,\widetilde{{\mathcal L}}_E, \widetilde{{\mathcal H}}_E and \widetilde{\mathcal{D}}_E. Note that S itself need not be regular. We also obtain results concerning the extension of (one-sided) congruences, which we apply to (one-sided) congruences on maximal subgroups of regular semigroups. If S has an inverse subsemigroup U of E-regular elements, such that E\subseteq U and U intersects every \widetilde{{\mathcal H}}_E-class exactly once, then we say that U is an {em inverse skeleton} of S. We give some natural examples of semigroups possessing inverse skeletons and examine a situation where we can build an inverse skeleton in a \widetilde{\mathcal{D}}_E-simple monoid. Using these techniques, we show that a reasonably wide class of \widetilde{\mathcal{D}}_E-simple monoids can be decomposed as Zappa-Sz\acute{\rm e}p products. Our approach .can be immediately applied to obtain corresponding results for bisimple inverse monoids

کلمات کلیدی:

Idempotents, mathcal{R}, mathcal{L}, restriction semigroups, Zappa-Szacute{rm e}p products

لینک ثابت مقاله در پایگاه سیویلیکا: