PSEUDOCOMPACT INVERSE PRIMITIVE (SEMI)TOPOLOGICAL SEMIGROUPS

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We study the structure of inverse primitive pseudocompact semitopological and topological semigroups. We find conditions when the maximal subgroup of an inverse primitive pseudocompact semitopological semigroup S is a closed subset of S and describe the topological structure of such semiregular semitopological semigroups. We describe the structure of pseudocompact topological Brandt λ^0-extensions of topological semigroups and semiregular (quasi-regular) primitive inverse topological semigroups. In particular we show that inversion in a quasi-regular primitive inverse pseudocompact topological semigroup is continuous. Also an analogue of Comfort–Ross Theorem proved for such semigroups: a Tychonoff product of an arbitrary family of primitive inverse semiregular pseudocompact semitopological semigroups with closed maximal subgroups is pseudocompact. We describe the structure of the Stone-Čech compactification of a Hausdorff primitive inverse countably compact semitopological semigroup S such that every maximal subgroup of S is a topological group.

Also we show that the Stone-Čech compactification of a Tychonoff countably compact semitopological paragroup is a topological paragroup.

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