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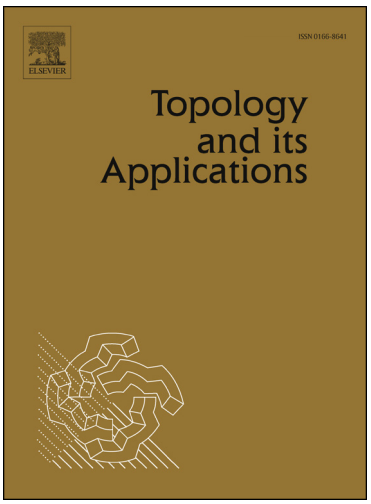

C-extensions of topological groups

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C-extensions of topological groups

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Abstract

We show that if a topological group G is C-embedded in a regular Lindelöf space X then, under mild restrictions on G or X, the space X is a topological group containing G as a dense topological subgroup, and both groups G and X are $\mathbb{R}$-factorizable. This fact includes as a special case the description of pseudocompact topological groups as dense C-embedded subgroups of compact groups obtained by Comfort and Ross in 1966.

We also introduce the new notions of (simply) sm-factorizable and densely sm-factorizable topological groups, and establish several relations between these classes of groups on the one hand and the class of $\mathbb{R}$-factorizable groups on the other.

MSC (2010): 54H11, 54A25, 54C30

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