

Constancio Hernández, Michael Tkačenko
Subgroups of \mathbb{R} -factorizable groups

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Abstract: The properties of \mathbb{R} -factorizable groups and their subgroups are studied. We show that a locally compact group G is \mathbb{R} -factorizable if and only if G is σ -compact. It is proved that a subgroup H of an \mathbb{R} -factorizable group G is \mathbb{R} -factorizable if and only if H is z -embedded in G . Therefore, a subgroup of an \mathbb{R} -factorizable group need not be \mathbb{R} -factorizable, and we present a method for constructing non- \mathbb{R} -factorizable dense subgroups of a special class of \mathbb{R} -factorizable groups. Finally, we construct a closed G_δ -subgroup of an \mathbb{R} -factorizable group which is not \mathbb{R} -factorizable.

Keywords: \mathbb{R} -factorizable group, z -embedded set, \aleph_0 -bounded group, P -group, Lindelöf group

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