Paratopological groups with countable strong Hausdorff number. (English) Zbl 1475.22002


Recall that a semitopological group is a group with a topology such that the multiplication in the group is separately continuous. A paratopological group is a group with a topology such that the multiplication is jointly continuous. If $G$ is a paratopological group and the inverse operation of $G$ is continuous, then $G$ is called a topological group.

In this paper, a new cardinal function called the strong Hausdorff number in semitopological groups is introduced. It is shown that every paratopological group with countable strong Hausdorff number is $\omega$-admissible. Applying this result, it is proved that every bounded set in a paratopological group with countable strong Hausdorff number is strongly bounded, which partially answers to a question posed by Sánchez and Tkachenko.

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MSC:

22A05 Structure of general topological groups
54H11 Topological groups (topological aspects)
54D30 Compactness
54G20 Counterexamples in general topology

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References:

[3] Ravsky, A., Pseudocompact paratopological groups that are topological (2013)

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