Alas, D. T.
On the number of compact subsets in topological groups. (English) Zbl 0632.54001

Let $\mathcal{K}$ be the set of all compact subsets of a nondiscrete $T_2$ topological group $G$, and $\psi (G)$ the pseudocharacter. The boundedness number $bo(G)$ of $G$ is defined by the smallest infinite cardinal $\alpha$ such that for any open neighborhood $V$ of the unit of $G$, there is a subset $A$ of $G$ with $|A| \leq \alpha$ so that $V \cdot A = G$. The author proves two theorems, namely, $\psi (G) \leq |G| \leq |\mathcal{K}| \leq bo(G)^{\psi (G)}$ and, under GCH, $|\mathcal{K}|^{\aleph_0} = |\mathcal{K}|$ for a pseudocompact $G$. Finally there are five examples which are useful to readers.

Reviewer: K.Iséki

MSC:
54A25 Cardinality properties (cardinal functions and inequalities, discrete subsets)
22A05 Structure of general topological groups

Keywords:
weak Lindelöf number; pseudocharacter; boundedness number

Full Text: EuDML