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Strong pseudocompact properties

Comment.Math.Univ.Carolin. 55,1 (2014) 101–109.

Abstract: For a free ultrafilter p on \mathbb{N} , the concepts of strong pseudocompactness, strong p -pseudocompactness and pseudo- ω -boundedness were introduced in [Angoa J., Ortiz-Castillo Y.F., Tamariz-Mascarúa A., *Ultrafilters and properties related to compactness*, Topology Proc. **43** (2014), 183–200] and [García-Ferreira S., Ortiz-Castillo Y.F., *Strong pseudocompact properties of certain subspaces of \mathbb{N}^** , submitted]. These properties in a space X characterize the pseudocompactness of the hyperspace $\mathcal{K}(X)$ of compact subsets of X with the Vietoris topology. In this paper, we study the strong pseudocompactness and strong p -pseudocompactness of certain spaces. Besides, we established a relationship between these kind of properties and a result involving topological groups of I. Protasov [*Discrete subsets of topological groups*, Math. Notes **55** (1994), no. 1–2, 101–102].

Keywords: p -pseudocompactness; ultrapseudocompactness; strongly pseudocompactness; strongly p -pseudocompactness; weak P -points; \mathfrak{c} – OK points; Rudin-Keisler pre-order
AMS Subject Classification: Primary 54A20, 54D99; Secondary 54D80

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